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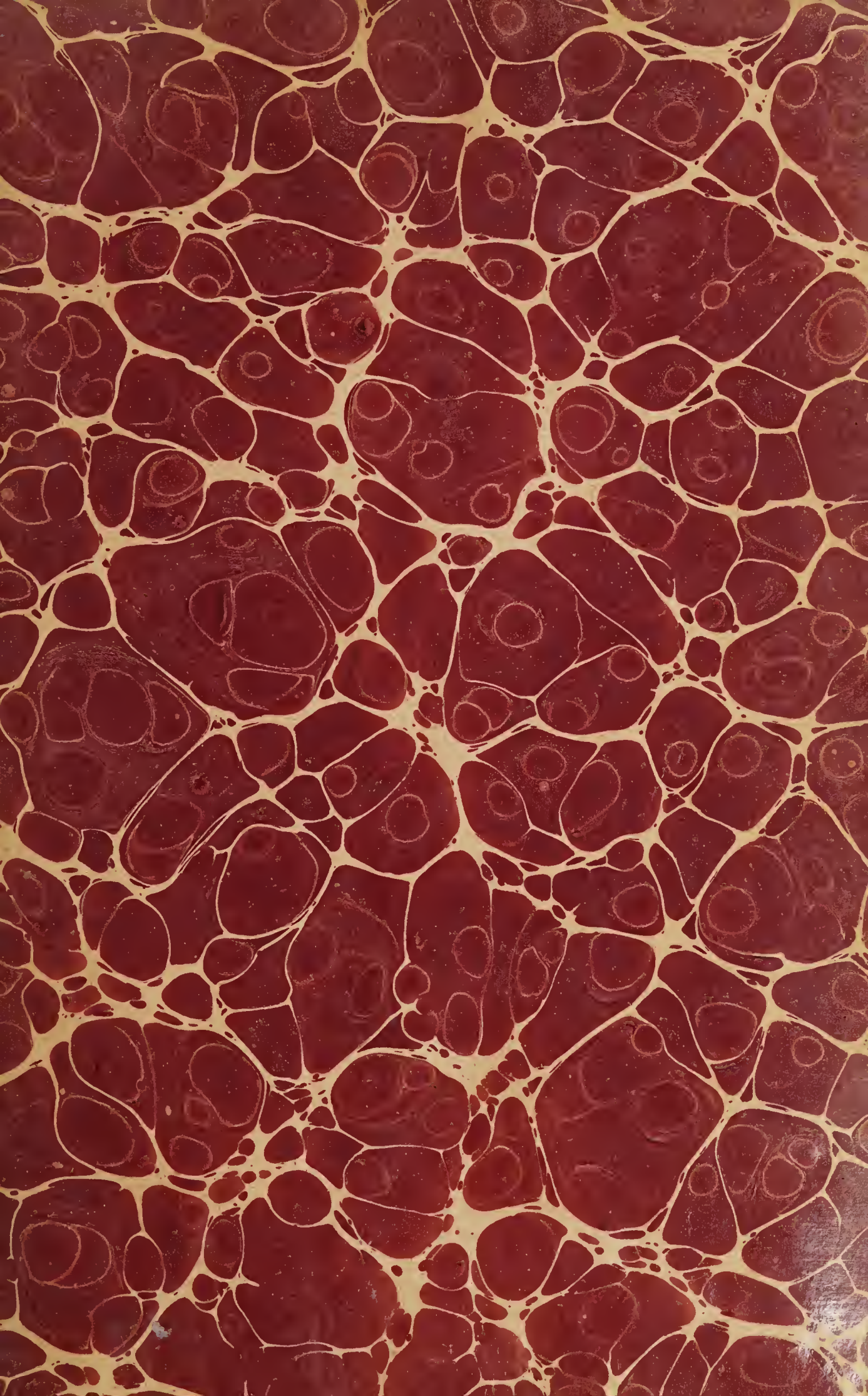
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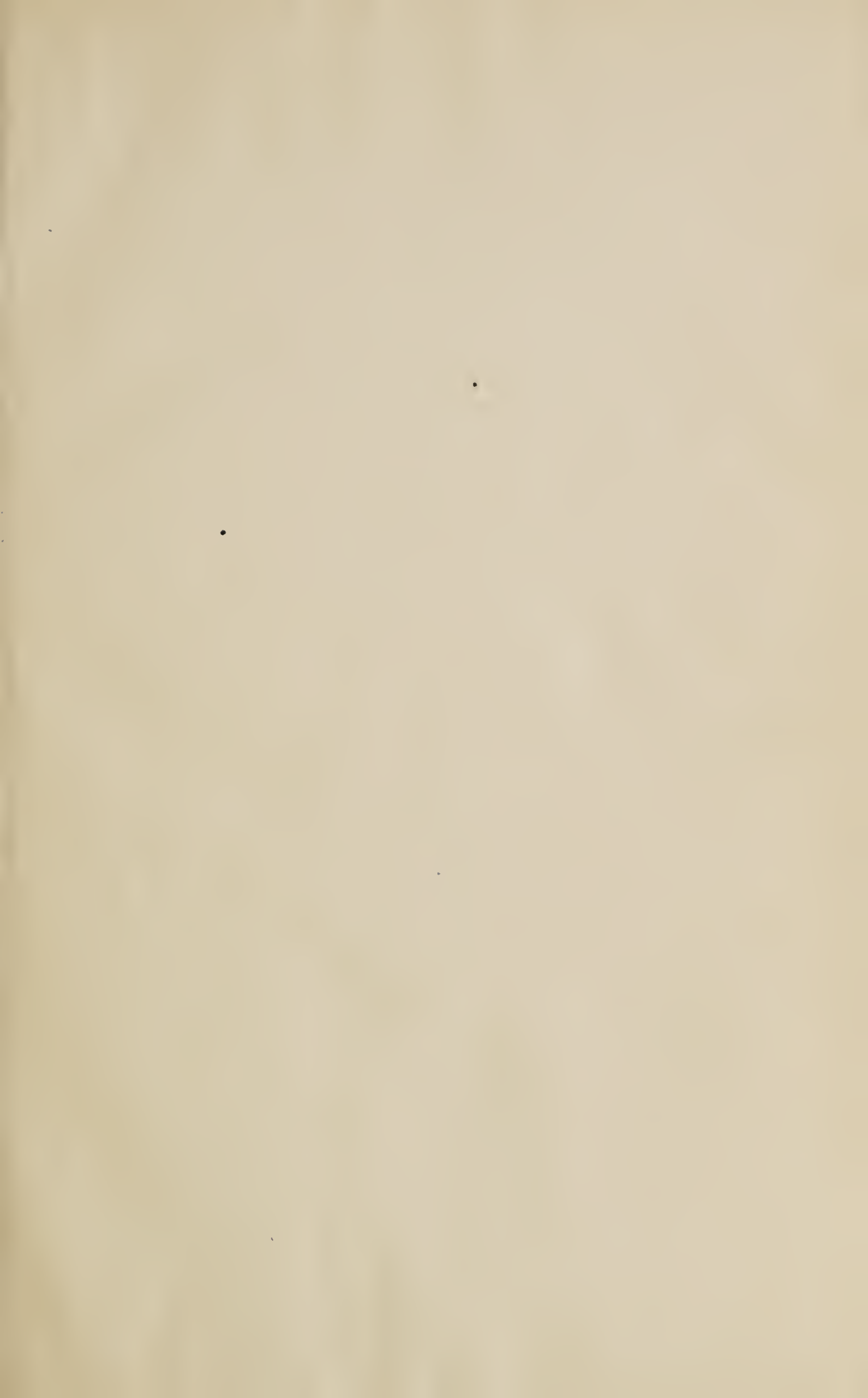
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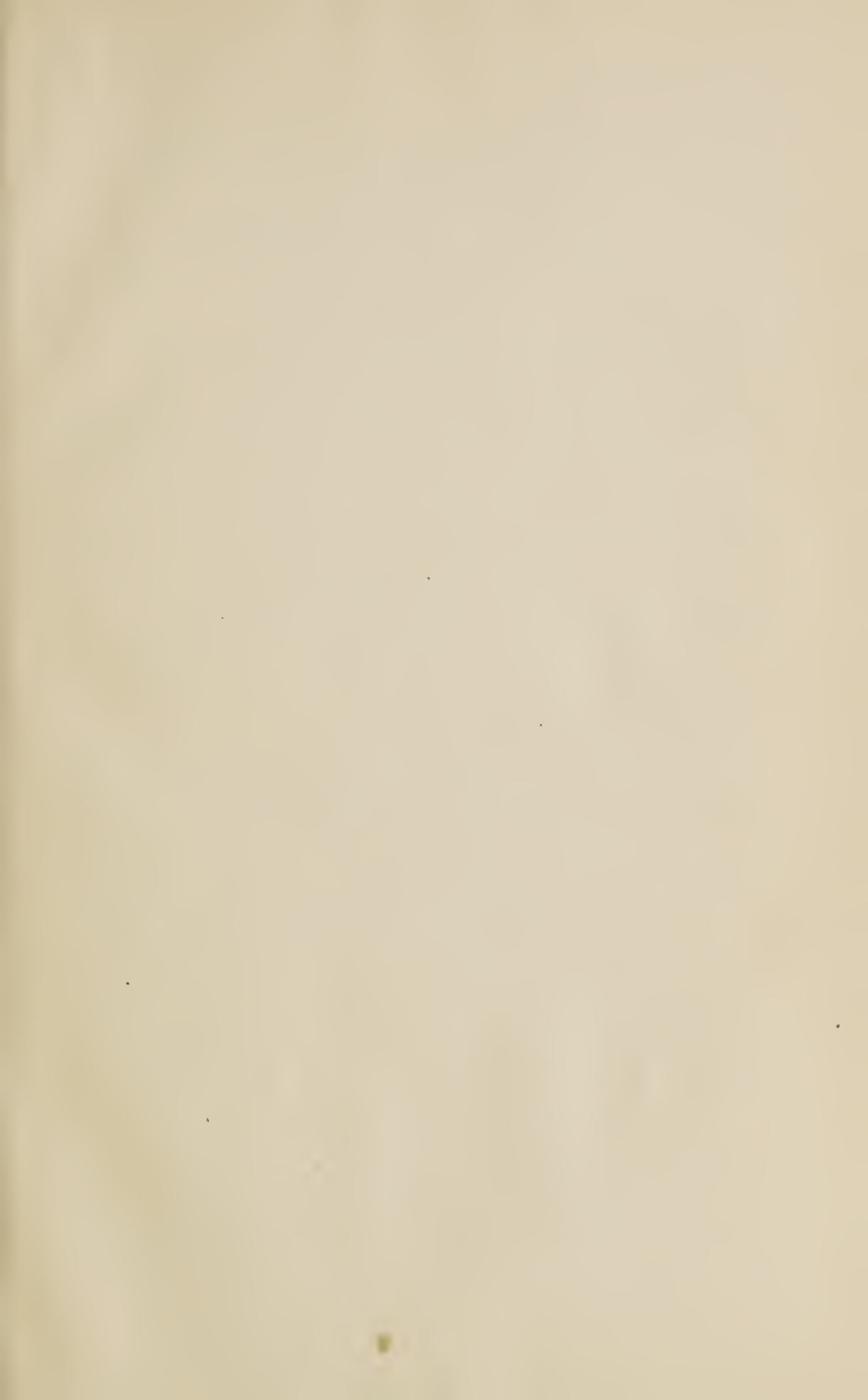
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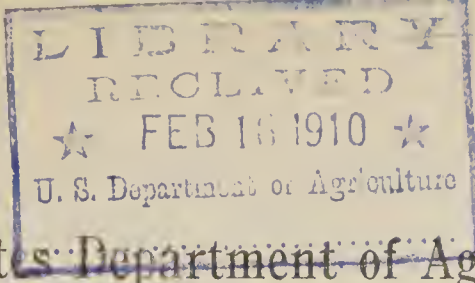
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Issued February 14, 1910.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

142407

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JANUARY, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Raising Lambs in Alabama. Maintenance Rations for Ewes. Feeding Cotton-seed Meal to Pregnant Ewes. By D. T. Gray and J. W. Ridgway. (Bulletin 148, pp. 131-157, pls. 4.)

This bulletin discusses the adaptability of Alabama for sheep raising and reports the results of experiments to study early lamb production in Alabama, to study feeds and methods for carrying the pregnant ewe through the winter months, and to test cotton-seed meal as a feed for pregnant ewes.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

The Dairy Cow's Record and the Stable. By L. Anderson and C. W. Rubel. (Bulletin 204, pp. 63-90, figs. 24.)

This bulletin gives the results of an inspection of the conditions surrounding the production of the milk supply of Los Angeles and other places in southern California, with the records of dairy cows, and suggestions for improvement of conditions are presented.

Commercial Fertilizers. By J. S. Burd. (Bulletin 205, pp. 91-117.)

This bulletin contains the results of inspection work, together with the tabulated analyses of fertilizers collected for the half-year ended June 30, 1909.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Report on Commercial Fertilizers, 1909. By E. H. Jenkins and J. P. Street. (Biennial Report, 1909-10, pt. 1, pp. 118+VIII.)

The results of fertilizer inspection work carried on by the station in 1909, including analyses of 316 brands of fertilizers on sale in the state, are reported.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Spanish Peanuts, Soy Beans, and Skim Milk as Feeds Supplementary to Corn. By P. N. Flint. (Bulletin 87, pp. 3-10, figs 4.)

The results of experiments conducted in the summer of 1909 to test soy beans, peanuts, and skim milk as supplementary rations in the economical production of pork are reported.



ILLINOIS STATION, Urbana, E. Davenport, Director.

Pasteurization as a Factor in Making Butter from Cream Skimmed on the Farm. By C. E. Lee. (Bulletin 138, pp. 369-438.)

The results of investigations during the past four years in the study of problems relative to the quality of butter manufactured in Illinois creameries from farm-ski med cream are reported in this bulletin.

Composition of Market Butter. By C. E. Lee and J. M. Barnhart. (Bulletin 139, pp. 441-457.)

The purpose of the investigations reported in this bulletin was to study the composition of butter as it is found in the market, and also to note the effect of variation in making upon fat, water, and salt content.

Relative Efficiency of Different Rations for Fleshing Horses for Market. By R. C. Obrecht. (Bulletin 141, pp. 525-562, figs. 11.)

The main object of these experiments was to secure data for a comparison of rations for feeding horses, as follows: Corn and oil meal; corn, oats, and oil meal; corn, bran, and oil meal; corn, oats, bran, and oil meal; when fed in connection with clover hay or with timothy hay, with respect to the following points: (1) The rapidity and extent of gains; (2) the economy of gains as measured by feed consumed; (3) the nature of the gains as affecting conformation and ultimately the commercial value, and (4) the relative profit to the feeder after considering all items of expense and income.

Short Fed Steers: A Comparison of Methods of Feeding. By H. W. Mumford and H. O. Allison. (Bulletin 142, pp. 565-578, figs. 5.)

The results of tests with two carloads of cattle under Illinois conditions to determine the relative merits of two different methods of feeding are reported.

A Portable Panel Fence. By W. Dietrich. (Circular 132, pp. 4, fig. 1.)

A portable fence which can be used for calves, sheep, and pigs is described and illustrated in this circular.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Marketing of Eggs. By A. G. Philips. (Bulletin 162, pp. 243-258.)

In addition to statistics on the egg production of Kansas, this bulletin gives directions for the care, grading, and marketing of eggs.

MAINE STATION, Orono, C. D. Woods, Director.

Data on Certain Factors Influencing the Fertility and Hatching of Eggs. By R. Pearl and F. M. Surface. (Bulletin 168, pp. 105-164, dgms. 2.)

This bulletin discusses certain positive results that have been secured by the station in investigations on the physiology of reproduction in fowls with special reference to the factors influencing the hatching of eggs. An extensive bibliography is included.

Two Recent Epidemics of Late Blight and Rot of Potatoes in Aroostock County. By W. J. Morse. (Bulletin 169, pp. 165-184, figs. 2.)

The various factors responsible for the losses occurring in the yield of potatoes in 1907 and 1909 from late blight and rot are discussed in this bulletin.

The Pine-leaf Chermes and the Green-winged Chermes. By Edith M. Patch. (Bulletin 171, pp. 201-204, figs. 3.)

Notes are given on the life history, habits, and means of controlling these insects affecting white pine and spruce trees in Maine.



Official Inspections. (Official Inspection 16, pp. 153-164.)

The results of the inspection and analyses of ice-cream thickeners, maple sugar, jams, jellies, preserves, eggs, whisky, and rice are reported in this bulletin, together with a discussion of the use of chemicals in food.

MARYLAND STATION. College Park, H. J. Patterson, Director.

Nodular Tæniasis, or Tapeworm Disease, of Fowls. By G. E. Gage and C. L. Opperman. (Bulletin 139, pp. 73-85, figs. 4.)

This bulletin reports observations on the outward symptoms and the internal post-mortem findings of the tapeworm disease of chickens recently occurring at the Maryland Station.

The San José Scale and Osage-orange Hedge. By T. B. Symons and L. M. Peairs. (Bulletin 140, pp. 87-101.)

The results of spraying experiments with various commercial spray solutions to test their effectiveness for the control of the San José scale, directions for making lime-sulphur wash, and the dissemination of the scale by means of the osage-orange hedge are discussed in this bulletin.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 252, pp. 4.)

This is a summary for December, 1909.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Rearing Calves on Skim Milk and Supplementary Feed. By H. W. Norton, Jr. (Bulletin 257, pp. 3-29, figs. 10.)

This bulletin gives the records of 63 pail-fed beef and dairy types of calves from birth to one year of age to illustrate the application of economic methods in beef production.

Keeping Qualities of Butter. By W. S. Sayer, O. Rahn, and Bell Farrand. (Technical Bulletin 1, pp. 5-61, fig. 1.)

This bulletin does not attempt to solve problems, but rather to furnish information for the specific problems which must be attacked before the question of the keeping qualities of butter may be understood satisfactorily.

Keeping Qualities of Butter. By O. Rahn, C. W. Brown, and L. M. Smith. (Technical Bulletin 2, pp. 44, figs. 6.)

In continuation of previous investigations reported in Technical Bulletin 1, this bulletin reports the results of a study of the effect of salt and proteins on the keeping quality of butter. A bibliography relating to the subject is included.

Studies of Agglutination Reactions in Hog Cholera During the Process of Serum Production. By W. Giltner. (Technical Bulletin 3, pp. 5-21.)

The object in the agglutination tests reported in this bulletin was to determine the relation, if any, between the phenomenon of agglutination of *Bacillus cholerae suis* and the virulence of hog-cholera virus or potency of immunizing serum.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Inspection and Analyses of Commercial Fertilizers on Sale in the State. (Circular 20, pp. 3-15.)

Analyses of fertilizers secured in the course of inspection work in the State during the season of 1905-6 are reported.

Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Circular 21, pp. 3-19.)

Similar in scope and contents to the above.

Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Circular 22, pp. 3-24.)

Analyses of fertilizers secured in the course of inspection work in the State during the season of 1906-7 are reported.

Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Circular 23, pp. 4-20.)

Similar in scope and contents to the above.

Inspection and Analyses of Commercial Fertilizers on Sale in the State.
(Circular 24, pp. 3-21.)

Similar in scope and contents to the above.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Changes in the Composition of the Loess Soils of Nebraska Caused by
Cultivation. By F. J. Alway. (Bulletin 111, pp. 3-19.)

Analyses of soils from different parts of Nebraska are reported to show wherein the chief changes in composition have taken place during the past thirty to fifty years of cultivation and also wherein the most rapid changes of the future are to be expected.

Experiments with Corn. By E. G. Montgomery. (Bulletin 112, pp. 5-36, figs. 11.)

This bulletin gives a report on two general tests of ear to row breeding work by different methods and also plans for conducting a breeding plat.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Acting Director.

The Oblique-banded Leafroller (*Archips rosaceana*). By E. D. Sanderson and Alma D. Jackson. A New Insectary. By E. D. Sanderson. (Scientific Contributions 3, pp. 389-403, pls. 5.)

The injuries caused by the oblique-banded leafroller, its food plants, life history, natural enemies, remedial measures, and bibliography are described in this bulletin, together with an account of the construction of the new station insectary.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Report of Analyses of Samples of Commercial Fertilizers Collected by
the Commissioner of Agriculture During 1909. (Bulletin 318, pp. 293-381.)

There are presented in this bulletin the analyses of samples of fertilizers collected during 1909 and published by the director of the New York Agricultural Experiment Station without comment, in accordance with the provisions of the state law.

OHIO STATION, Wooster, C. E. Thorne, Director.

Meteorological Summary—Press Bulletins—Index. (Bulletin 205, pp. 279-316.)

This bulletin contains a summary of meteorological phenomena for 1908, reprints of Press Bulletins 293-303 issued during the year, and a subject index.

Twenty-eighth Annual Report, 1909. (Annual Report, 1909, pp. XXIX, pl. 1.)

This contains a report by the secretary of the board of control, a financial statement for the year ended June 30, 1909, report of the director reviewing the work of the station in 1909, and a list of publications issued during the year.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Acidity of Creamery Butter and its Relation to Quality. By C. Larsen, T. H. Lund, and L. F. Miller. (Bulletin 116, pp. 573-594.)

The results of investigations conducted at the station with a view of establishing a more satisfactory method of judging or scoring butter than the senses of taste, smell, and sight are reported.

Growing Sugar-beet Seed in South Dakota. By J. H. Shepard. (Bulletin 117, pp. 597-609, figs. 4.)

This bulletin reports the results of a continuation of cooperative investigations conducted between the station and the Bureau of Plant Industry of this Department, previously reported in Bulletin 106, and gives the results with the home-grown seed produced in 1908 and with the new varieties of seed sown during that year.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Sanitary Cow Stalls. By C. A. Ocock. (Bulletin 185, pp. 3-18, figs. 9.)

A number of home-made sanitary stalls for use in cow barns is illustrated and described in this bulletin.

The Wisconsin Dairy Cow Competition. By F. W. Woll. (Circular of Information 9, pp. 9.)

The object of this circular is to explain the method of conducting the competition and the conditions under which the prizes offered for herd and individual records of production of butter fat for the period of one year will be awarded.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING FEBRUARY, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Report on Commercial Fertilizers, 1909. By E. H. Jenkins and J. P. Street. (Biennial Report, 1909-10, pt. 1, pp. 118.)

The results of inspection work in 1909 and analyses of 737 samples of commercial and miscellaneous fertilizers collected in the State are reported. A summary of a paper by E. M. East on the asexual transmission of variation in the potato is also included.

The Transmission of Variations in the Potato in Asexual Reproduction. By E. M. East. (Biennial Report, 1909-10, pp. 119-160, pls. 5.)

This paper, which will appear in the complete biennial report for 1909-10 and which is summarized in part 1 of the report (pp. 117, 118), discusses the transmission of variations in the potato from one generation to another through the tubers as a result of the principle of heredity.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Corn. By P. H. Rolfs. (Bulletin 100, pp. 11-26, figs. 5.)

Descriptions are given in this bulletin of several varieties of corn, together with notes on the selection, storage, and culture of corn.

Pineapple Culture VI. The Effect of Fertilizers upon the Quality of the Fruit. By A. W. Blair and R. N. Wilson. (Bulletin 101, pp. 27-42, fig. 1.)

In continuation of work reported in Bulletin 83 of the station, this bulletin was undertaken for the purpose of finding out whether the quality of pineapples is affected by the kind or quantity of the fertilizer used.

GEORGIA STATION. Experiment, M. V. Calvin, Director.

Corn Culture. By J. M. Kimbrough. (Bulletin 88, pp. 44-63, figs. 15.)

The results of variety, fertilizer, and cultural tests with corn are reported in this bulletin.

INDIANA STATION, Lafayette, A. Goss, Director.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 72.)

The usual executive, departmental, and financial reports relating to the work of the station for the year ended June 30, 1909, are presented.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Hog Cholera and Vaccination. By F. S. Schœnleber. (Bulletin 163, pp. 259-276, figs. 12.)

The method of preparing and distributing antihog-cholera serum at the Kansas Station for the control of hog cholera, together with the methods and results of vaccination, are reported in this bulletin.

Chinch Bug. By J. B. Parker. (Circular 5, pp. 6, fig. 1.)

Notes are given in this circular on the destructiveness, habits, and means of controlling the chinch bug.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Report of Commercial Feed Stuffs. By J. E. Halligan. (Feed Stuffs Report, 1908-9, pp. 193.)

Analyses of 10,672 samples of feeding stuffs collected in the State during the season of 1908-9 are reported.

MAINE STATION, Orono, C. D. Woods, Director.

Apple Diseases Caused by *Coryneum foliicolum* and *Phoma mali*. By C. E. Lewis. (Bulletin 170, pp. 185-200, pls. 13.)

This bulletin contains an account of the cultural characters of *Coryneum foliicolum* and *Phoma mali*, together with the results of inoculation experiments which were made in order to determine the extent of their parasitism upon leaves, wood, and fruit of the apple.

Official Inspections. (Official Inspection 17, pp. 165-180.)

This bulletin discusses the chief requirements of the Maine seed-inspection law and features connected with its enforcement, and gives the results of seed inspection in the State in 1909.

Official Inspections. (Official Inspection 19, pp. 28.)

The chief requirements of the fertilizer law, the constituents and valuation of fertilizers, and the results of inspection work in 1909 are presented in this bulletin.

Official Inspections. (Official Inspection 20, pp. 29-36.)

This bulletin reports the analyses of samples of feeding stuffs submitted, chiefly by dealers, from May to December, 1909.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 253, pp. 4.)

This is a summary for January, 1910.

An Act to Regulate the Sale of Concentrated Commercial Feed Stuffs. By P. H. Smith. (Circular 17, pp. 4.)

The text and interpretations of the law are reported.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 115-428, figs. 101.)

This contains the usual financial, executive, and departmental reports summarizing the work of the station during the year, together with meteorological observations, and reprints of Bulletins 252-255, Special Bulletins 47-49, Circulars 1-5, Technical Bulletin 1, and Press Bulletins 19-21 issued during the year.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson,
Director.

Pecan Culture. By G. L. Clothier. (Bulletin 124, pp. 8.)

The purpose of this bulletin is to set forth impartially the actual facts with reference to pecan culture, as far as they are known to apply to Mississippi.

The Inspection and Analyses of Commercial Feeding Stuffs. By W. F. Hand et al. (Bulletin 125, pp. 3-27.)

This bulletin gives the results of the inspection and analyses of commercial feeding stuffs found on sale in the State and registered up to November 8, 1909.

The Inspection and Analyses of Commercial Fertilizers. By W. F. Hand et al. (Bulletin 126, pp. 4-95.)

This bulletin gives the results of inspection work and the analyses of fertilizers collected during the season of 1908-9.

The Inspection and Analyses of Cotton-seed Meal. By W. F. Hand et al. (Bulletin 127, pp. 4-47.)

This bulletin summarizes the results of the inspection and analyses of cotton-seed meal for the season of 1908-9.

Sugar Cane for Sirup Making. By E. B. Ferris. (Bulletin 129, pp. 3-16, figs. 4.)

This bulletin gives the results of eight years' work at the station in the culture of sugar cane for sirup making, and treats of the culture and harvesting of the cane and the method of manufacturing the sirup.

Peanuts. By E. B. Ferris. (Bulletin 130, pp. 3-10.)

The results of seven years' work in the culture of peanuts at the McNeill Station, together with the results obtained at several other southern stations, are reported in this bulletin.

Snap Beans. By E. B. Ferris. (Bulletin 131, pp. 3-8.)

This bulletin gives the results of culture, variety, and fertilizer experiments with snap beans grown at the station, the object being to encourage the growing of truck crops in south Mississippi.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Analyses and Valuations of Commercial Fertilizers and Ground Bone. (Bulletin 224, pp. 3-46.)

This bulletin gives the balance of the analyses of fertilizers collected in 1909 and not reported in Bulletin 223, together with a discussion of the whole inspection work for the year.

Insects Injurious to Strawberries. By J. B. Smith. (Bulletin 225, pp. 3-37, pls. 2, figs. 9.)

Notes are given in this bulletin on the life history, habits, and means of controlling the various insects that are injurious to strawberries in New Jersey.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

A Chemical Study of the Lime-sulphur Wash. By L. L. Van Slyke, C. C. Hedges, and A. W. Bosworth. (Bulletin 319, pp. 383-418.)

The work described in this bulletin was undertaken for the purposes of learning (1) how the composition of the lime-sulphur wash is influenced by conditions of preparation and (2) what the composition is of various commercial preparations.

Concentrated Lime-sulphur Mixtures. By P. J. Parrott. (Bulletin 320, pp. 419-438, fig. 1.)

The results of tests to determine the efficiency of commercial and homemade lime-sulphur mixtures for the control of San José scale and blister mite are reported in this bulletin.

Composition and Use of Lime-sulphur Washes. By F. H. Hall. (Popular Bulletins 319, 320, pp. 13.)

This is a popular summary of Bulletins 319 and 320 of the station, dealing with the chemical basis and toxic properties of lime-sulphur compounds and of the preparation and use of such mixtures for spraying purposes.

The Bacterial Soft Rots of Certain Vegetables. Part I. The Mutual Relationships of the Causal Organisms. By H. A. Harding and W. J. Morse. (Technical Bulletin 11, pp. 251-368, figs. 10.)

This bulletin gives the partial results of investigations on the soft rots of cabbage, cauliflower, and turnip, conducted jointly by the agricultural experiment stations of Vermont and New York, and deals with the morphology and cultural characters of 43 strains of organisms.

Crown-rot, Arsenical Poisoning, and Winter Injury. By J. G. Grossenbacher. (Technical Bulletin 12, pp. 369-411, pls. 8.)

This bulletin reviews the literature on frost, fungi, and arsenical injury to fruit trees in relation to crown-rot, and gives the results of some orchards studied during the fall of 1909 to obtain reliable information regarding this disease.

PENNSYLVANIA STATION, State College. T. F. Hunt, Director.

A Strain Test of Jersey Wakefield Cabbage. By C. E. Myers. (Bulletin 96, pp. 3-18, figs. 5.)

The results of experiments covering a period of two years with 25 strains of Jersey Wakefield cabbage, with a view of determining the effect of plant variations upon profitable crop production are reported in this bulletin.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Analyses of Commercial Fertilizers. By B. L. Hartwell, J. F. Morgan, and L. F. Whipple. (Bulletin 138, pp. 15-31.)

This bulletin and No. 137, published in July, 1909, contain the analyses of the samples of fertilizers collected during the season of 1909.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Analyses of Commercial Fertilizers. (Bulletin 147, pp. 3-44.)

This bulletin contains the analyses of 805 samples of fertilizers, previously published in weekly bulletins issued from January to June, 1909.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. 32.)

This contains the usual executive, departmental, and financial reports of the station for the fiscal year ended June 30, 1907.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 39.)

Similar in scope to the above for the fiscal year ended June 30, 1908.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 127, figs. 30.)

This contains the usual executive, departmental, and financial reports, and the following special articles: The corn and cotton root louse in South Carolina; stomach worms, hookworm, and other parasites of the digestive tract of ruminants; cotton anthracnose investigation; fall and winter cabbages; and peach tree borer.

UTAH STATION, Logan, E. D. Ball, Director.

A Study of the Production and Movement of Nitric Nitrogen in an Irrigated Soil. By R. Stewart and J. E. Greaves. (Bulletin 106, pp. 69-96.)

The investigations reported in this bulletin were begun in 1903 for the purpose of determining the influence of irrigating waters upon the production and movement of nitrates in irrigated soils, and the results obtained during the years 1903 to 1907, inclusive, are reported.

VERMONT STATION, Burlington, J. L. Hills, Director.

Vermont Shrubs and Woody Vines. By L. R. Jones and F. V. Rand. (Bulletin 145, pp. 51-199, figs. 84.)

This bulletin contains an account of the native shrubs and woody vines of Vermont, with reference to edible qualities, poisonous nature, ornamental values, and economic uses, with briefer mention of such introduced species as are of especial interest.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

The Hybrid Wheats. By W. J. Spillman. (Bulletin 89, pp. 5-27, figs. 6.)

This bulletin contains a history of the inception, progress, and results up to the present time of the investigation at this station of the possibility of the production of new varieties of wheat having certain desirable characteristics by means of crossing or hybridizing existing varieties.

Growing Blackberries and Raspberries in Washington. By W. S. Thornber. (Popular Bulletin 18, pp. 4.)

Directions for the culture of raspberries, blackberries, and loganberries, with notes on the varieties adapted to Washington conditions are given in this bulletin.

The Use of Fertilizer Lime. By R. W. Thatcher. (Popular Bulletin 19, pp. 4.)

This is a popular edition of Bulletin 88 of the station, which treats of the beneficial effect of liming certain soils and of the application of land plaster for leguminous crops.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Suggestions for the Improvement of Wisconsin Horses. By A. S. Alexander. (Bulletin 186, pp. 3-30, figs. 9.)

Statistics of the horse industry in Wisconsin are presented and discussed in this bulletin, with suggestions for the improvement of the industry by means of selection, proper care, and the use of pure-bred sires.

The University Dairy Herd, 1908-9. By G. C. Humphrey and F. W. Woll. (Bulletin 187, pp. 3-22, figs. 3.)

This bulletin gives a report on the management of the University dairy herd and presents data relating to the feed consumption and the production of milk and butter fat by the cows in the herd during the year ended May 11, 1909.

Wisconsin Horse Breeding Statistics. By A. S. Alexander. (Bulletin 188, pp. 3-54.)

This bulletin gives the results of the operation of the Wisconsin stallion license law, the amendments to the law passed in 1909, a summary of stallion legislation in other States, lists of approved American studbooks and of those not certified by the Government, the number and character of licenses issued during 1908-9, and a directory of owners of stallions and jacks licensed during the year.

The Efficiency, Economy, and Physiological Effect of Machine Milking. By F. W. Woll and G. C. Humphrey. (Research Bulletin 3, pp. 61-148, figs. 9.)

Experiments conducted by the station with a view of securing reliable information as to the practicability and general value of milking machines are reported in this bulletin.

Some Conditions which Influence the Germination and Fertility of Pollen. By E. P. Sandsten. (Research Bulletin 4, pp. 149-172, figs. 5.)

The work described in this bulletin is confined principally to a study of the pollen grain as affected by various external conditions, together with a brief presentation of its purely botanical relations.

The Rôle of the Ash Constituents of Wheat Bran in the Metabolism of Herbivora. By E. B. Hart, E. V. McCollum, and G. C. Humphrey. (Research Bulletin 5, pp. 173-188.)

This bulletin reports a study of the action of the components of the phytin complex in wheat bran when administered separately assalts, their channels of excretion and general relation to the phenomena of constipation and diuresis, with their consequent effect on milk secretion.

Studies on the Bacterial and Leucocyte Content of Milk. By E. G. Hastings, B. W. Hammer, and C. Hoffmann. (Research Bulletin 6, pp. 189-218, figs. 2.)

This bulletin discusses the bacterial content of the milk of individual animals, the occurrence and distribution of a lactic-acid organism resembling the *Bacillus bulgaricus* of Yogurt, and experimental leucocytosis in the cow's udder.

Operating the Casein Test at Cheese Factories. By E. B. Hart and W. H. Cooper. (Circular of Information 10, pp. 4.)

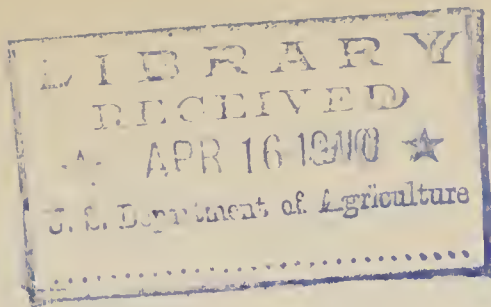
Directions are given in this circular for operating the Hart test in determining the amount of casein in milk and of the method of payment whereby each patron is paid for the actual cheese-making value of the milk delivered.

WYOMING STATION, Laramie, J. D. Towar, Director.

Nineteenth Annual Report, 1909. (Annual Report, 1909, pp. 48.)

This contains the usual executive, departmental, and financial reports of the station for the year ended June 30, 1909, together with a meteorological summary for the year 1908.





United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS,

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MARCH, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA CANEBRAKE STATION, Uniontown, F. D. Stevens, Director.

Agricultural Value of Nitrogenous Materials for Cotton on the Houston Clays, as Determined by Field Trials. Residual Effect of Cover Crops. Alfalfa—Yields, and Effect as a Means of Restoring Fertility. By F. D. Stevens. (Bulletin 27, pp. 16, fig. 1.)

This bulletin gives notes on the yields of alfalfa secured at the station in 1909, its value for maintaining soil fertility, and the results of fertilizer and variety tests with cotton.

ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Tests of Varieties of Cotton in 1909. By J. F. Duggar and E. F. Cauthen. (Bulletin 149, pp. 3-8.)

The results of tests in 1909 with 30 varieties of cotton are reported in this bulletin.

Twenty-first Annual Report, 1909. (Annual Report 1909, pp. 34.)

The financial, executive, and departmental reports of the station for 1908 are given.

ALABAMA TUSKEGEE STATION, Tuskegee Institute, G. W. Carver, Director.

Possibilities of the Sweet Potato in Macon County, Alabama. (Bulletin 17, pp. 5-19, figs. 8.)

Directions are given in this bulletin for the culture, harvesting, and storing of sweet potatoes, with notes on their preparation in many ways as food for man and their feeding value for live stock.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Olive Culture and Oil Manufacture in the Arid Southwest. By J. E. Coit. (Bulletin 62, pp. 525-555, figs. 3.)

The adaptability of the valleys of southern Arizona for the growing of olives is discussed in this bulletin, and directions are given for the culture of olives, together with the results of experiments in olive-oil manufacture.

ARKANSAS STATION, Fayetteville. C. F. Adams, Director.

Studies on the Bacteriology of Infectious Swine Diseases. By R. R. Dinwiddie and J. F. Stanford. (Bulletin 105, pp. 315-350.)

This bulletin gives the results of bacteriological observations in cases of naturally acquired infectious swine diseases in Arkansas, together with the results of inoculation experiments.

COLORADO STATION, Fort Collins. L. G. Carpenter, Director.

Cultivation and Irrigation of the Orchard. By O. B. Whipple and W. Paddock. (Circular 3, pp. 8.)

This circular gives a few of the important principles of handling the soil in fruit growing under irrigation.

Preparing Land and Trees for Orchard Planting. By W. Paddock and O. B. Whipple. (Circular 4, pp. 8.)

Directions for preparing land and the culture and care of young orchard trees are given in this circular.

Cultural Methods for Some Common Vegetables. By R. S. Herrick, W. Paddock, and L. F. Paull. (Circular 5, pp. 12.)

This circular gives directions for the culture of asparagus, cabbage, celery, onions, and tomatoes in Colorado.

Garden Accessories and Mushroom Growing. By R. R. Jeffries, W. Paddock, and L. F. Paull. (Circular 6, pp. 11.)

Notes are given in this circular on the value, use, and construction of cold frames and hotbeds, on sterilizing seed beds for tomatoes and other plants, and on the culture of mushrooms.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Fourteenth Report on Food Products and Second Report on Drug Products, 1909. By J. P. Street. (Biennial Report, 1909-10, pt. 2, pp. 163-280.)

The results of food and drug inspection work in Connecticut for the year ended July 31, 1909, are reported.

Commercial Feeding Stuffs, 1909. By E. H. Jenkins and J. P. Street. (Biennial Report, 1909-10, pt. 3, pp. 281-322.)

This contains analyses and valuation of 226 samples of feeds collected in the course of feeding-stuff inspection in 1909, together with analyses of 75 samples sent in to the station by individuals.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Apple Growing in New England. I—The Apple Industry. II—Renovation of Old Apple Orchards. By C. D. Jarvis. (Bulletin 61, pp. 59-89, pls. 10.)

This bulletin discusses the apple industry in New England, and illustrates and describes methods of renovating old apple orchards.

Biennial Report, 1907-8 and 1908-9. (Biennial Report, 1907-8 and 1908-9, pp. XLI+482.)

This contains the financial, executive, and departmental reports for the years ended June 30, 1908, and June 30, 1909, reprints of Bulletins 49-58 of the station issued during this period, an article on the intracellular enzymes of *Penicillium* and *Aspergillus* with special reference to those of *Penicillium camemberti*, and general weather reviews for 1907 and 1908.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Cotton Culture. By J. M. Kimbrough. (Bulletin 89, pp. 65-84, figs. 2.)

This bulletin reports the results of variety and fertilizer tests with cotton in 1909, with notes on cotton wilt and its control.

HAWAII STATION, Honolulu, E. V. Wilcox, Special Agent in Charge.

Experiments in Tapping Ceara Rubber Trees. By E. V. Wilcox. (Bulletin 19, pp. 7-20.)

The results of experiments to determine the yield of latex to be expected from Ceara rubber trees in the climate of Hawaii are reported in this bulletin.

Shield Budding the Mango. By J. E. Higgins. (Bulletin 20, pp. 6-16, pls. 2, figs. 4.)

The results of experiments, together with a description of the method employed, in budding mangoes are described and illustrated in this bulletin.

Carbon Bisulphid for Killing Weeds. By E. V. Wilcox. (Press Bulletin 25, pp. 4.)

The value and use of carbon bisulphid as a means of destroying various kinds of weeds are presented in this bulletin.

ILLINOIS STATION, Urbana, E. Davenport, Director.

How to Fix Up the Yard. Some Kinds of Trees, Shrubs, and Vines, and Where to Plant Them. By H. F. Major. (Circular 135, pp. 24, figs. 24.)

This circular gives directions for the proper selection and planting of trees, shrubs, and vines for the improvement of homes and grounds.

Directions for Making Spray Mixtures. (Circular 136, pp. 15, fig. 1.)

Directions are given in this circular for the preparation and use of insecticides and fungicides, alone and combined, together with a discussion of spray pumps and their equipment.

The Small Home Yard. By A. P. Wyman. (Circular 138, pp. 16, figs. 8.)

Directions are given in this circular for the laying out of lawns with trees, bushes, vines, and flowers as a means of properly decorating small home grounds.

How to Grow Muskmelons. By J. W. Lloyd. (Circular 139, pp. 19, figs. 7.)

This circular gives directions regarding the culture of muskmelons in Illinois.

The Live Stock Situation in Illinois. By H. W. Mumford. (Circular 140, pp. 15.)

This is an address delivered at the annual meeting of the Illinois Live Stock Breeders' Association in January, 1910, setting forth some facts and observations regarding the present status of the live stock industry in the State.

INDIANA STATION, Lafayette, A. Goss, Director.

The San José Scale. Some Sprays for Its Control. By C. G. Woodbury. (Bulletin 138, pp. 75-86, figs. 7.)

The purpose of this bulletin is to report upon the results of tests carried on for the past three years with several commercial preparations for the control of San José scale, together with a brief popular description of the scale and its work.

Results of Cooperative Tests of Varieties of Corn, Wheat, Oats, Soy Beans, and Cowpeas, 1909. By A. T. Wiancko and C. O. Cromer. (Bulletin 139, pp. 89-123, fig. 1.)

This bulletin gives the results of comparative tests of leading varieties of corn, winter wheat, oats, soy beans, and cowpeas conducted under the direction of the station by farmers in various parts of Indiana during the year 1909.

Spraying the Orchard. By C. G. Woodbury. (Circular 21, pp. 20, figs. 17.)

This circular gives brief practical directions for combating some of the most common pests of Indiana orchards, with directions for the preparation and use of sprays for fungus diseases.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Selection and Feeding of Laying Hens. By A. G. Philips. (Bulletin 164, pp. 277-291, figs. 4.)

This bulletin gives directions for the selection and management of laying hens, together with a discussion of the nutritive values of various feeds and methods of feeding.

Variety Tests. By A. M. Ten Eyck. (Circular 6, pp. 6.)

Notes are given in this circular on the best varieties of cereal crops grown at the station for a period ranging from 5 to 7 years.

Corn Earworm. By T. J. Headlee. (Circular 7, pp. 6.)

This circular discusses the life history, habits, and methods of controlling the corn earworm.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Information Concerning Food and Drug Inspection and Investigation. (Bulletin 144, pp. 249-267.)

This bulletin presents some of the sections of the federal and Kentucky food and drugs acts and discusses their bearing on the sale of such products in the State.

Some Lessons from the Corn Shows. Corn Pests. By H. Garman. (Bulletin 145, pp. 269-298, pls. 6.)

This bulletin contains suggestions with reference especially to selection of seed corn and to the choice of ears for exhibition, together with notes on the various diseases, insects, and animals which attack the crop.

MAINE STATION, Orono, C. D. Woods, Director.

The Ligaments of the Oviduct of the Domestic Fowl. By M. R. Curtis. (Bulletin 176, pp. 20, pls. 4, figs. 5.)

The purpose of the present paper is to describe the ligaments which suspend the oviduct from the body wall, maintain the convolutions in the tube and hold the funnel in position to receive the mature yolks from the ovary, and to describe the bundles of muscle fibers which occur in these ligaments and are continuous with the musculature of the walls of the oviduct.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 254, pp. 4.)

This is a summary for February, 1910.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Organic Nitrogenous Compounds in Peat Soils. By S. L. Jodidi.
(Technical Bulletin 4, pp. 28, fig. 1.)

The results of investigations on the composition of the organic and inorganic nitrogenous compounds in the peat soils of Michigan are reported in this bulletin.

MINNESOTA STATION, University Farm, St. Paul, A. F. Woods,
Director.

Seventeenth Annual Report, 1909. (Annual Report, 1909, pp. XXVI+431, pls. 1, figs. 158.)

This contains a report by the director reviewing the work and expenditures of the station and reprints of Bulletins 110-116, issued during the year.

MISSOURI STATION, Columbia, F. B. Mumford, Director.

Specific Effects of Rations on the Development of Swine. By E. B. Forbes. (Bulletin 81, pp. 3-69.)

This bulletin, in addition to economic data, contains the results of three experiments on the effects of feeding stuffs on the development of animals.

Protecting Orchards Against Frosts and Freezes. By W. L. Howard. (Circular of Information 35, pp. 10.)

The methods employed in different countries for the protection of various kinds of fruit trees and buds against frosts and freezing are reported in this bulletin.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Oats. By E. G. Montgomery. (Bulletin 113, pp. 3-16, fig. 1.)

This bulletin discusses the results of variety tests with oats, different rates of sowing, and the cultivation of oats.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Ice Cream. Flavoring Extracts and Soda Fountain Sirups. Coloring Matter in Food Products. Labeling of Food Products Artificially Colored. By S. C. Dinsmore. (Circulars 2, 3, 4, and 7, p. 1 each.)

The definitions of the above substances and their use in food products, as prescribed by the state law, are presented and briefly discussed in these circulars.

Inspection of Nursery Stock. By S. B. Doten. (Circular 5, pp. 2.)

The text of the state nursery inspection law is presented and discussed in this circular.

Spraying Trees for the Elm Scale. By S. B. Doten. (Circular 6, figs. 3.)

Notes are given in this circular on the destructiveness of the elm scale in Nevada, and methods of control are briefly outlined.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Acting Director.

The Codling Moth. By E. D. Sanderson. (Bulletin 143, pp. 61-106, figs. 23.)

This bulletin gives the practical results of spraying apple orchards for the control of insects and diseases conducted by the station from 1905 to 1908, inclusive, the studies during the last two years being made on the codling moth and its control.

Some Apple Diseases. By C. Brooks. (Bulletin 144, pp. 109-138, figs. 29.)

The purpose of this bulletin is to answer inquiries more fully than can be done by letter regarding the most important apple diseases, and also to make available to the people of the State some of the results that have already been published in more technical form in the biennial reports of the experiment station regarding the nature and control of these diseases.

Variety Tests of Oats, Barley, Wheat, and Rye. By F. W. Taylor. (Bulletin 145, pp. 141-153.)

The results of variety tests with oats, barley, wheat, and rye conducted at the station for a number of years are reported in this bulletin.

Analyses of Fertilizers. By B. E. Curry. (Bulletin 146, pp. 157-164.)

The results of the inspection and analyses of fertilizers collected in the State in 1909 are reported in this bulletin.

The Inspection of Feeding-Stuffs. By F. W. Morse and B. E. Curry. (Bulletin 147, pp. 169-186.)

This bulletin contains the results of the inspection and analyses of feeding stuffs in New Hampshire in 1909, the text of the state law, a proposed amendment to the feed law, and the text of a uniform feed-stuff law approved by a conference of state officials and manufacturers at Washington, D. C., September 10, 1909.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Peach Yellows and Little Peach. By M. A. Blake. (Bulletin 226, pp. 3-26, pls. 16.)

The purpose of this bulletin is to furnish the information that is available regarding the diseases of peach yellows and little peach for the benefit of peach growers in the State.

Tests of Commercial Cultures for Soil Inoculation. By J. G. Lipman. (Bulletin 227, pp. 3-23, pls. 2, figs. 3.)

The results of experiments with several commercial inoculating materials for farm crops are reported in this bulletin.

Insects Injurious to Sweet Potatoes in New Jersey. By J. B. Smith. (Bulletin 229, pp. 3-16, pl. 1, figs. 3.)

Notes are given in this bulletin on the life history and habits of the more important insects injurious to sweet potatoes, with suggestions as to the best means for their control.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Tests of Pumping Plants in New Mexico, 1908-9. By B. P. Fleming and J. B. Stoneking. (Bulletin 73, pp. 50, figs. 10.)

This bulletin reports a series of tests undertaken, in cooperation with the irrigation investigations of this Office, for the purpose of securing reliable information on the cost of pumping water in New Mexico.

Onion Tests, 1905-1909. By F. Garcia. (Bulletin 74, pp. 24, figs. 6.)

The results of fertilizer experiments with onions conducted at the station from 1905 to 1909, inclusive, are reported in this bulletin, together with other data regarding varieties, culture, and shipping of onions.

Apple Culture under Irrigation. By F. Garcia. (Bulletin 75, pp. 44, figs. 14.)

This bulletin treats of apple culture under irrigation and is presented with a view of giving information as to the adaptability of the climate of New Mexico for profitable apple production.

NEW YORK CORNELL STATION, Ithaca, H. J. Webber, Acting Director.

Fancy Cheeses for the Farm and Factory. By C. A. Publow. (Bulletin 270, pp. 3-12, figs. 3.)

This bulletin furnishes information regarding the making of soft or fancy cheeses that can be most easily made on the farm or in the factory.

The Incomes of 178 New York Farms. By M. C. Burritt. (Bulletin 271, pp. 15-27, fig. 1.)

This bulletin presents the conclusions from a thesis on the profitableness of 178 farms located in different parts of the State, with a view of showing the successes secured in farming in the East.

Fire Blight of Pears, Apples, Quinces, etc. By H. H. Whetzel and V. B. Stewart. (Bulletin 272, pp. 31-51, figs. 19.)

This bulletin gives information on the nature and control of the most common and destructive bacterial disease of fruit trees, known as "fire blight."

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Director's Report for 1909. By W. H. Jordan. (Bulletin 321, pp. 439-458.)

This is a report of the administration and work of the station for 1909.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Insect Enemies of Cantaloupes, Cucumbers, and Related Plants. By R. I. Smith. (Bulletin 205, pp. 3-40, figs. 18.)

This bulletin gives notes on the life history, habits, and means of controlling insects injurious to cucurbits.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Some Ready-mixed Paints. By E. F. Ladd and G. A. Abbott. (Bulletin 86, pp. 79-124.)

The results of the analyses of the pigment and vehicle of a large number of ready-mixed paints found on the market in North Dakota are reported in this bulletin.

Seed Disinfection and Crop Production, Methods and Types of Machinery Needed. By H. L. Bolley. (Bulletin 87, pp. 131-166, pls. 7, figs. 15.)

This bulletin, in addition to a general statement of the characteristics of a few of the chief diseases of wheat, oats, and other cereals which are introduced by way of the seed, gives a simple statement of the best methods at present known for the prevention or control of seed-borne diseases.

OHIO STATION, Wooster, C. E. Thorne, Director.

Corn Judging: Studies of Prominent Ear Characters in Their Relation to Yield. By C. G. Williams and F. A. Welton. (Bulletin 212, pp. 213-236, figs. 9.)

This bulletin presents data on the relation of prominent ear characters to yield, as throwing light upon corn judging or the selection of seed corn.

Essentials of Successful Field Experimentation. By C. E. Thorne. (Circular 96, pp. 38, figs. 21.)

The increasing interest which the farmers of Ohio are manifesting in field experiments, and the importance of so conducting such experiments as to obtain results which shall be useful and not misleading, are the reasons for the publication of this circular.

The Work of the Department of Cooperative Experiments. By L. H. Goddard. (Circular 97, pp. 8.)

This circular outlines the proposed cooperative work between the station and farmers in 1910 in field experiments, fair exhibits, and farm management investigations.

OKLAHOMA STATION, Stillwater, J. A. Craig, Director.

Tree Culture. By O. M. Morris. (Bulletin 86, pp. 3-35, figs. 15.)

This bulletin gives directions for the germination of tree seeds, the planting, pruning, cultivation, and care of various tree seedlings for useful and ornamental purposes, and reports a list of nurseries inspected and to which certificates were granted in the State.

Eighteenth Annual Report, 1909. (Annual Report, 1909, pp. 7-142, figs. 59.)

This contains the usual executive, financial, and departmental reports, an article describing and illustrating the new hog barn, and reprints of Bulletins 82-85 and Press Bulletins 160-170, inclusive.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Annual Report, 1909. (Annual Report, 1909, pp. 3-40.)

This contains the usual executive, financial, and departmental reports for the year ended June 30, 1909.

VERMONT STATION, Burlington, J. L. Hills, Director.

Feeding Stuffs Inspection. Concerning Commercial Feeding Stuffs. By J. L. Hills, C. H. Jones, and P. A. Benedict. (Bulletin 144, pp. 3-48.)

The results of feeding-stuffs inspection in 1909 are reported in this bulletin, including analyses of 189 samples representing 168 brands of goods.

The Grass and Clover Seed Trade in Vermont in 1907-1909. By G. T. Harrington. (Bulletin 146, pp. 203-240.)

The purpose of this bulletin is to present and briefly discuss the results of seed tests made at the station since 1907, to review the concurrent trade conditions, and incidentally to point out the reasons for and the necessity of such means of seed control as may afford buyers reliable information as to purity and comparative values.

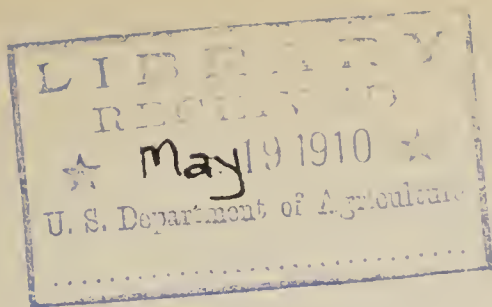
Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. XXXI, pl. 1.)

This contains the usual financial statement and the administrative report by the director reviewing the work of the station during the year.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

An Experiment in Clearing Logged-off Land by the Aid of a Donkey Engine in 1908. By W. H. Lawrence. (Bulletin 1—Special Series, pp. 3-15.)

Tests to determine the rapidity, effectiveness, and cost of clearing land by means of a donkey engine are reported in this bulletin.



United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING APRIL, 1910.

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ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

Facing the Boll Weevil Problem in Alabama. By W. E. Hinds. (Bulletin 146, pp. 81–102, pl. 1, figs. 10.)

This bulletin contains information relative to the boll weevil and methods of combating it, designed to enable the farmer to recognize the weevil and adjust his farm practice properly on its appearance. The text of the Alabama boll-weevil law and of the rules and regulations concerning the importation of articles liable to contain the Mexican cotton boll weevil are given. A bibliography is appended.

Crimson Clover. By J. F. Duggar. (Bulletin 147, pp. 105–129, figs. 3.)

The results of cooperative experiments in the culture of crimson clover for the improvement of soil fertility in Alabama are reported.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Distribution of Seeds and Plants. By E. J. Wickson and R. E. Mansell. (Seed Bulletin 1909–10, pp. 6.)

This bulletin reports the number of packages of seed distributed since 1902, outlines the aims and methods of distribution, and lists the seeds now available for that purpose.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

The Velvet Bean. By J. M. Scott. (Bulletin 102, pp. 45–58, figs. 4.)

A history of the velvet bean is followed by directions as to time and method of planting, seed selection, preparation of seed bed, cultivation, fertilizing, and harvesting, and a discussion of its uses as a soil renovator and as food for pork, beef, and milk production.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Economy of the Round Dairy Barn. By W. J. Fraser. (Bulletin 143, pp. 44, figs. 42.)

This bulletin gives full specifications and detailed cost of construction of the university's 60-foot circular dairy barn, the saving of round over rectangular barns, and descriptions and illustrations of round barns in actual use.

Growing Tomatoes for Early Market. By J. W. Lloyd and I. S. Brooks. (Bulletin 144, pp. 47-88, figs. 17.)

This bulletin deals with the methods used by commercial growers in producing and marketing tomatoes, and reports the results of four years' fertilizer experiments and five years' work with Bordeaux mixture.

Eight Years' Soil Investigation in Southern Illinois. By C. G. Hopkins, J. H. Pettit, and J. E. Readhimer. (Circular 122, rev., pp. 4.)

This circular gives the results of eight years' experiments in the application of lime, nitrogen, potassium, and phosphorus to southern Illinois soils and the growing of legumes.

Cow Index of Keep and Profit. By W. J. Fraser. (Circular 134, pp. 2-22, figs. 5.)

This circular contains in tabular form the economic items of a dairy herd and directions for applying the table to a given herd without further computation.

Results of Spraying Experiments, 1909. By R. B. Howe. (Circular 137, pp. 40, figs. 11.)

This circular undertakes to answer the question, "What spray or sprays are best for Illinois?" It discusses arsenate of lead and Paris green, lime and sulphur as summer spray, Bordeaux and arsenicals of various strengths, Bordeaux with iron sulphate, Target Brand Quick Bordeaux, and spraying for codling moth, and reports the results of tests of several sprays. A plat of the Sawdon orchard at Griggsville is given.

INDIANA STATION, Lafayette, A. Goss, Director.

Agricultural Extension. II, Corn Shows and Selecting, Preparing, and Scoring Exhibits. By A. T. Wiancko and G. I. Christie. (Circular 18, pp. 30, figs. 25, map 1.)

Rules governing exhibits at local corn shows are suggested and directions given for selecting, preparing, and arranging exhibits for corn judging in accordance with the score card.

Agricultural Extension. III, Industrial Contests for Boys and Girls. By G. I. Christie and Henrietta W. Calvin. (Circular 19, pp. 11, figs. 2.)

Rules and directions are given for corn growing, bread making, fruit canning, and sewing contests.

Agricultural Extension. IV, Milk Production. III, Economic and Sanitary Milk Production. By O. F. Hunziker and O. E. Reed. (Circular 20, pp. 24, figs. 15.)

Directions are given for selecting and feeding the dairy herd, keeping of milk and butter-fat records, caring for milk, and feeding the skim-milk calf.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Registered Feeding Stuffs (Feeding Stuffs Bulletins Nos. 5-9, pp. 4 each).

This series of monthly bulletins gives the names of feeds registered for the year ending June 30, 1910, and the name and address of the manufacturer of each.

Investigation of the Vitality of Kansas Seed Corn. By A. M. Ten Eyck. (Circular 8, pp. 4.)

The results of germination tests with several varieties of Kansas seed corn from the 1909 crop are reported in this circular.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. XV + 510, pls. 64, figs. 5.)

The report of the director is followed by reprints of bulletins Nos. 133 to 138.

MAINE STATION, Orono, C. D. Woods, Director.

Official Inspections. (Official Inspection 18, pp. 181-192.)

The results of analyses of samples of drugs secured from the trade are given.

Official Inspections. (Official Inspection 21, pp. 37-44.)

This reports observations made and data secured during the inspection of creamery butter, cider vinegar, and pork sausage, and states the requirements yeast must meet in order to be sold as compressed yeast after April 1, 1910.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Corn: Variety Tests, Seed Breeding, Selection and Testing. By C. W. Nash. (Bulletin 141, pp. 103-134, figs. 10.)

The results of variety tests, together with notes on various features connected with the selection, breeding, and testing of corn, are reported in this bulletin.

The Codling Moth. By T. B. Symons and L. M. Peairs. (Bulletin 142, pp. 135-176, figs. 25.)

A description and life history of the codling moth are followed by a discussion of its natural enemies and directions for its control by means of spraying. The results of spraying tests with various materials are given.

Controlling Fungus Diseases. By J. B. S. Norton and A. J. Norman. (Bulletin 143, pp. 177-215, figs. 8.)

An account is given of recent spraying experiments with various fungicides and directions for their practical use. A spray calendar and formulas are given.

Apple Culture. By C. P. Close. (Bulletin 144, pp. 217-265, figs. 27.)

Directions are given for choosing the site of the orchard, preparing the land, laying out, pruning and managing orchards, and grading, packing, storing, and marketing the crop.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Inspection of Commercial Fertilizers for the Season of 1909. By H. D. Haskins, L. S. Walker, and P. V. Goldsmith. (Bulletin 131, pp. 3-87.)

The fertilizer-inspection work of the season of 1909 is reported and discussed with special reference to retail cash prices, and the wisdom of buying only high-grade fertilizers. Fertilizer brands showing serious commercial shortage are mentioned and the average quality of fertilizers summarized. Conversion factors and analyses, showing detailed composition of fertilizers sold in the State, are given.

Inspection of Commercial Feed Stuffs. By P. H. Smith and J. C. Reed. (Bulletin 132, pp. 3-64.)

Analyses of commercial feed stuffs sold in this State in 1909 and comments on the results of the inspection are given. Important topics treated are weed seeds in feed stuffs, weight of sacked feeds, and rations for dairy stock. A tabulated list of the wholesale cost of feeding stuffs for the year is added.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 255, pp. 4.)

This is a summary for March, 1910.

MINNESOTA STATION, University Farm, St. Paul, A. F. Woods,
Director.

Report of the Northeast Experiment Farm. By A. J. McGuire.
(Bulletin 116, pp. 385-421, figs. 8.)

This bulletin reports the results of the work of the Northeast Experiment Farm with clover, fodder, corn, root crops, potatoes, vegetables, orchard and small fruits, hogs, and dairy cattle.

Sixteenth Annual Report, 1908. (Annual Report, 1908, pp. XXV + 365, pls. 8, figs. 169.)

The report of the director is followed by reprints of bulletins Nos. 102 to 109.

Seventeenth Annual Report, 1909. (Annual Report, 1909, pp. XXVI-421, pls. 2, figs. 148.)

The report of the director is followed by reprints of bulletins Nos. 110 to 116.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Soils of Mississippi. By W. L. Hutchinson. (Bulletin 132, pp. 8, figs. 2.)

Notes are given in this bulletin on methods of soil management for the maintenance of fertility, including drainage, tillage, the prevention of uplands from washing, and supplying the soil with humus.

The Inspection of Commercial Feeding Stuffs. By W. F. Hand et al.
(Bulletin 133, pp. 4-31.)

This bulletin contains analyses of the samples of commercial feeding stuffs found on sale in the State during the season of 1908-9.

Broom Corn. By W. R. Perkins. (Bulletin 134, pp. 5.)

Notes are given in this bulletin on the varieties, culture, harvesting, and curing of broom corn.

Cotton, 1909. By W. R. Perkins. (Bulletin 135, pp. 16.)

This bulletin reports tests of five different varieties of cotton, and gives the results of experiments in cotton breeding, topping, fertilizers, and cultural methods.

Inspection and Analyses of Commercial Fertilizers, 1909-10. By W. F. Hand et al. (Circular 30, pp. 4-31.)

Analyses of fertilizers collected in the course of inspection during the season of 1909-10 are reported in this circular.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

Soil Experiments on the Upland Loam of Southeast Missouri. By M. F. Miller and C. B. Hutchison. (Bulletin 83, pp. 3-16, figs. 3.)

The results of experiments conducted during the years 1906-1908, inclusive, for the purpose of determining the most profitable treatment for the soil in the region of Victoria, Jefferson County, are reported in this bulletin.

Soil Experiments on the Prairie Silt Loam of Southwest Missouri. By M. F. Miller and C. B. Hutchison. (Bulletin 84, pp. 19-35, figs. 5.)

Experiments similar to the above conducted near Lamar on the dark gray silt loam of the rather level prairie land, which covers wholly or in part 10 counties in southwest Missouri, are reported.

Inspection of Commercial Fertilizers. By P. F. Trowbridge. (Bulletin 85, pp. 40-71.)

This bulletin contains the results of the analyses of fertilizers received at the experiment station during the year 1909.

Soil Experiments on the Rolling Limestone Upland of Southwest Missouri. By M. F. Miller and C. B. Hutchison. (Bulletin 86, pp. 75-94, figs. 5.)

The results of experiments begun in 1905 at Billings, Christian County, for the purpose of determining the most profitable treatment for the soil in southwest Missouri known as the Springfield group of soils are reported in this bulletin.

Cooperative Experiments of the Department of Agronomy. By M. F. Miller and C. B. Hutchison. (Circular 36, pp. 11.)

This circular furnishes directions for cooperative experiments, including variety testing of corn, wheat, spring and winter oats, spring and winter barley, experiments with alfalfa, crimson clover, and fertilizer experiments with potatoes throughout the State, and grass experiments for the Ozark uplands.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Fruit Tree Planting in Montana. By R. W. Fisher. (Bulletin 77, pp. 3-35, figs. 7.)

Observations of the orchard work of Montana fruit growers and results of seven years' experiments at the Montana Experiment Station and in Bitter Root Valley are given. Methods of cultivation, irrigation, and orchard management are outlined and the best varieties for home use stated.

Steer Feeding: Small Grains and Clover Hay for Two-year-old Steers. By R. W. Clark. (Bulletin 78, pp. 39-48.)

Results of five years' feeding tests with barley meal, oats, bran, barley, frosted barley, and frosted wheat are given in this bulletin.

The Pear and Apple Blight in Montana. By D. B. Swingle. (Circular 2, pp. 9.)

The appearance and spread of the blight, its cause, symptoms, and treatment are discussed and lists of resistant varieties given.

Dry Farming Practice in Montana. By A. Atkinson and F. S. Cooley. (Circular 3, pp. 11-34, figs. 7.)

This circular discusses the equipment necessary for the beginner, the conservation of moisture, dry-land crops, live stock on the farm, and other topics of general interest to the dry farmer. A brief reading list is added.

The Army Cutworm. By R. A. Cooley. (Circular 4, pp. 35-44, figs. 2.)

The life history and importance of the army cutworm are briefly stated and methods for its prevention and for the after treatment of devastated grain fields outlined.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Annual Report of the Board of Control, the Director and the Members of the Station Staff, 1908. (Bulletin 66, pp. 9-70, pls. 7.)

This bulletin contains a report of the work of the station during the year ended June 30, 1908.

Digestion Experiments on the Range. By P. B. Kennedy and S. C. Dinsmore. (Bulletin 71, pp. 7-38, pls. 16.)

This bulletin contains analyses of 12 forage plants important on the range and the results of digestive experiments with them.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Individual Animal as the Unit in Profitable Dairying. By G. A. Smith. (Bulletin 322, pp. 16.)

This bulletin contains records of the amount of food eaten by cows in the station herd and the food cost of milk. Data from other herds are also given.

Robber Cows in Dairy Herds. By F. H. Hall. (Bulletin 322, popular edition, pp. 2-8.)

This is a popular edition of the above.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Bulletin 21, pp. 131-146.)

Various topics connected with the food and drug inspection work in North Dakota are reported in this bulletin.

Special Bulletin Food Department. (Special Food Bulletin 22, pp. 147-162.)

This bulletin gives synopses of the North Dakota pure food, drug, and sanitary inspection laws, and discusses stock remedies, the preservation of eggs, paint frauds, a temperance beverage, and the sanitation of drinking water.

The Seed Control Act. By H. L. Bolley. (Special Seed Bulletin 1, pp. 3-15, fig. 1.)

This bulletin gives the text of the pure seed law of North Dakota, comments and notes on the law, and directions for sending samples of seeds to the station.

Report on Service Condition of Paints. By H. A. Gardner, G. Butler, and C. Macnichol. (Paint Bulletin 1, pp. 5-54, figs. 36.)

This bulletin outlines the methods of examining the condition of paint on fences and buildings and securing microphotographs, and reports the results of numerous tests of different formulas.

Report on the Service Condition of Paints. By J. Theobald and R. L. Peters. (Paint Bulletin 2, pp. 3-90.)

This bulletin reports the result of tests begun in 1905 of the paints of many manufacturers and dealers and of a practical painting test of 1907.

Report on the Service Condition of Paints. By S. M. Evans, R. W. Evans, and L. S. Hughes. (Paint Bulletin 3, pp. 5-36, figs. 15.)

A detailed report is given of the condition of paint on test fences erected in 1906 and 1907, and on houses to which paints of various formulas have been applied.

OHIO STATION, Wooster, C. E. Thorne, Director.

Forest Conditions in Ohio, Third Annual Report. (Bulletin 211, pp. 171-212, figs. 18.)

This report states the forest conditions in Ohio and gives information obtained in a reconnaissance forest survey and suggestions for conservative forest management in Ohio.

OKLAHOMA STATION, Stillwater, J. A. Craig, Director.

Indian Corn Culture. By L. A. Moorhouse, W. L. Burlison, and J. A. Ratcliff. (Bulletin 87, pp. 3-46, figs. 19.)

Tables show the acreage, value, and yield of Indian corn in Oklahoma since 1900, cost of producing an acre of corn, and the yields of Indian and Kafir corn during 1900-1903, inclusive. Directions are given for the production and harvesting of corn in Oklahoma.

The Southern Plum Aphis. By C. E. Sanborn. (Bulletin 88, pp. 3-8, figs. 5.)

A description and life history of the southern plum aphis is followed by lists of its food plants and insect enemies and directions for making and applying sprays for its eradication.

OREGON STATION, Corvallis, J. Withycombe, Director.

Thousand Headed Kale. By H. D. Scudder. (Circular Bulletin 5, pp. 4.)

The soil requirements of kale are stated and directions given for seeding, transplanting, feeding, and seed selection.

Alfalfa in Western Oregon. By H. D. Scudder. (Circular Bulletin 6, pp. 7.)

The requirements of alfalfa are stated and directions given for preparation of seed bed, the correction of acidity, seeding and inoculation, and the treatment of alfalfa fields.

Live Stock the Basis of Agricultural Prosperity. By J. Withycombe. Tillage and Cropping Methods for the Eastern Oregon Dry Farmer. By H. D. Scudder. Soil Fertility. By C. E. Bradley. The Home Orchard in Eastern Oregon. By C. I. Lewis. Better Cows. By F. L. Kent. Poultry on the Farm. By J. Dryden. (Circular Bulletin 8, pp. 3-33, figs. 17.)

This bulletin contains a series of popular articles on various subjects, for distribution in connection with a demonstration train.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Milling and Baking Tests. By F. D. Gardner. (Bulletin 97, pp. 3-18, figs. 3.)

This bulletin gives notes on wheat production in Pennsylvania, variety tests and composition of wheat, and reports the results of milling and baking tests with several varieties.

Preparation and Use of Concentrated Lime Sulphur. By J. P. Stewart. (Bulletin 99, pp. 3-15, figs. 3.)

Directions are given for the preparation, preservation, and application of lime sulphur.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Studies of the Needs of Rhode Island Soils. By H. J. Wheeler. (Bulletin 139, pp. 35-103 + VII.)

A compilation of material which has previously appeared in many different publications, most of which are now exhausted, and a list of publications of the Rhode Island Station available for distribution March 1, 1910.

Twenty-second Annual Report of the Rhode Island Station. (Annual Report, 1908-9, pp. 155-199.)

This contains an account of the work of the station during the year ended June 30, 1909.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Experiments with Hybrid Cottons. By J. N. Harper. (Bulletin 148, pp. 19, pls. 6.)

This bulletin is a progress report of breeding work with cotton. It outlines the methods used and gives a brief history and a statement of the important characteristics of each of the varieties worked with.

Fall and Winter Cabbages. By C. C. Newman. (Bulletin 149, pp. 3-11, figs. 5.)

Directions are given for the preparation of the soil, management of a plant bed, transplanting, fertilization, and cultivation of cabbages, and the results of a variety test are stated.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

The Relation of the Weather Service to the Farmers of Tennessee.
By J. F. Voorhees. (Bulletin 87, pp. 3-22, charts 13.)

Data are presented and discussed with reference to the relation of temperature and rainfall to crop production in Tennessee with a view of enabling the farmer to make practical use of the meteorological facts published by the Weather Service.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Gooseberries for the Home Garden or Commercial Orchard. By W. S. Thornber. (Popular Bulletin 25, pp. 4.)

Notes on varieties of American and European gooseberries tested at the station and on the culture, harvesting, and marketing of this fruit are given in this bulletin.

Currants for the Home Garden or Commercial Plantation. By W. S. Thornber. (Popular Bulletin 26, pp. 4.)

This bulletin contains the results of experiments and observations in connection with the investigation of the possibility of utilizing small and bush fruits as an intercrop in commercial orchards and for the home vegetable garden, as described in Popular Bulletin No. 25.

Spraying Calendar for 1910. By R. K. Beattie and A. L. Melander. (Popular Bulletin 27, folio.)

Directions for the preparation and use of various insecticides and fungicides are presented in this bulletin.

The Sulphur-lime Wash. By A. L. Melander and R. K. Beattie. (Popular Bulletin 28, pp. 4.)

This bulletin is a new edition of Popular Bulletins Nos. 2 and 16, dealing with the preparation and use of this insecticide, and includes the results of experiments and observations during the season of 1909.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Diseases of Garden Crops and Their Control. By N. J. Giddings. (Bulletin 123, pp. 5-18, pls. 5.)

Brief general descriptions of the more common diseases of garden crops are followed by directions for making and applying Bordeaux mixture, ammoniacal copper carbonate, an adhesive mixture, and solutions of corrosive sublimate and formalin.

Some Factors Influencing the Vigor of Incubator Chickens. By J. H. Stewart and H. Atwood. (Bulletin 124, pp. 21-45.)

This bulletin contains the results of experiments on the age and vigor of parent stock, the cooling of eggs during incubation, and the use of moisture during incubation.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Community Breeders' Association for Dairy Cattle Improvement. By G. C. Humphrey. (Bulletin 189, pp. 3-21, figs. 8.)

The advantages of cooperation through community associations in the production and improvement of high-grade dairy cattle, and methods of organization and cooperation with the College of Agriculture are outlined.

Common Insect Pests of Fruits in Wisconsin. By J. G. Moore. (Bulletin 190, pp. 3-38, figs. 32.)

This bulletin describes the appearance of insects affecting the apple, plum, cherry, and small fruits, and states means of combating each insect pest.

A Decade of Official Tests of Dairy Cows, 1899-1909. By F. W. Woll and R. T. Harris. (Bulletin 191, pp. 3-49, figs. 23.)

This bulletin gives a report of the tests of dairy cows in 1908-9 and during the decade ending 1909, with mention of cows of special merit.

The Dairy Calf at Meal Time. By D. H. Otis. (Bulletin 192, pp. 3-14, figs. 5.)

Directions are given for the feeding and management of the dairy calf during its first year.

Report of the Director, 1909. By H. L. Russell. (Bulletin 193, pp. 52, figs. 6.)

This bulletin summarizes the regular and research work and finances of the station for the year 1909.

New and Improved Tests of Dairy Products. By S. M. Babcock and E. H. Farrington. The Preparation of Buttermilk Curd. By J. L. Sammis. (Bulletin 195, pp. 21, figs. 7.)

This bulletin describes the Wisconsin hydrostatic cream balance, the use of fat-saturated alcohol in reading cream tests, a milk sediment test, and an improved method of preparing buttermilk curd.

Concentrated Feeding Stuffs and Fertilizers Licensed for Sale in Wisconsin, 1909. By F. W. Woll. (Special Bulletin, pp. 11.)

This bulletin contains a list of the manufacturers of concentrated commercial feeding stuffs and of commercial fertilizers licensed, and their brands of feeding stuffs licensed for sale in Wisconsin for the year ended December 31, 1909.

Concentrated Feeding Stuffs and Fertilizers Licensed for Sale in Wisconsin, 1910. By F. W. Woll. (Circular of Information 11, pp. 12.)

This circular contains a list of the manufacturers of concentrated commercial feeding stuffs and of commercial fertilizers licensed, and their brands of feeding stuffs licensed for sale in Wisconsin for the year ending December 31, 1910.

Spraying the Home Orchard. By J. G. Milward. (Circular of Information 12, pp. 8, figs. 4.)

General directions are given for mixing sprays and applying to small orchards. Special mention is made of brown rot of plums.

WYOMING STATION, Laramie, J. D. Towar, Director.

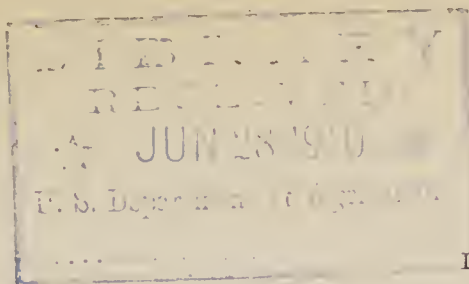
Barley. By L. B. McWethy. (Bulletin 83, pp. 3-12, pls. 5.)

Different barley types are described and the results of a variety test in 1909 given.

Field Peas. By L. B. McWethy. (Bulletin 84, pp. 3-11, pls. 3.)

Results of a variety test of field peas in 1909 are reported and the yields of oats after peas, wheat, clover, barley, sugar beets, and oats given. The climatic and cultural requirements and the harvesting of field peas are discussed.





Issued June 28, 1910.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING MAY, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

COLORADO STATION, Fort Collins, L. G. Carpenter, Director.

The Fixation of Nitrogen in Some Colorado Soils. By W. P. Headen. (Bulletin 155, pp. 3-48, figs. 8.)

This bulletin gives analyses of the water-soluble portions of numerous Colorado soils and presents studies of barren spots of "black alkali."

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

Apple Growing in New England. III, Planting the Apple Orchard. By C. D. Jarvis. (Bulletin 62, pp. 91-139, figs. 29.)

Directions are given for the selection, planting, and care of the orchard.

DELAWARE STATION, Newark, H. Hayward, Director.

Crimson Clover: Its Rate of Gaining Nitrogen. By C. L. Penny and Margaret B. MacDonald. (Bulletin 86, pp. 3-42, figs. 2.)

This bulletin reports the amount of nitrogen gained during the different periods in the growth of crimson clover.

Two Important Leaf-miners. By C. O. Houghton. (Bulletin 87, pp. 3-15, figs. 3.)

The history, distribution, life history, and parasites of *Tischeria malifoliella* and *Scolioneura capitalis* are given and remedial measures suggested.

Annual Report of the Director for the Fiscal Year Ending June 30, 1909. By H. Hayward. (Bulletin 88, pp. 5-10.)

This bulletin contains a brief statement of the work and publications of the experiment station for the year ended June 30, 1909.

HAWAII FEDERAL STATION, E. V. Wilcox, Special Agent in Charge.

Annual Report, 1909. (Annual Report, 1909, pp. 9-76, pls. 7, figs. 8.)

Investigations of Hawaiian insects, fruits, vegetables, soils, fertilizers, rice, and tree cottons during 1909 are reported.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Crop Rotation for Illinois Soils. By C. G. Hopkins. (Circular 141, pp. 20.)

This is a farmers' institute address on crop rotation and fertilizers as related to permanent agriculture in the United States and European countries. The literature of the subject is reviewed and notes given on rock phosphate, bone meal, potassium salts, and ground limestone.

European Practice and American Theory Concerning Soil Fertility. By C. G. Hopkins. (Circular 142, pp. 31.)

This circular presents letters from prominent American and European authorities on agriculture, published in the hope and belief that they will arouse interest in permanent systems of soil improvement.

Conservation of Energy, and Its Relation to the Dairyman. By W. J. Fraser. (Circular 143, pp. 26, chart 1.)

This is a farmers' institute address dealing with waste in the dairy industry and methods of checking it.

INDIANA STATION, Lafayette, A. Goss, Director.

Hog Cholera. By R. A. Craig and H. H. Madaus. (Bulletin 140, pp. 127-164, figs. 12.)

A discussion of hog cholera, its causes, symptoms, and preventive measures is followed by a report of the results of tests of the Dorset-Niles serum, and directions for preparation of the serum and for the production of hyperimmunes.

Agricultural Extension, VI. The Loose Smut of Oats and Stinking Smut of Wheat and Their Prevention. By J. C. Arthur and A. G. Johnson. (Circular 22, pp. 15, figs. 9.)

Grain smuts are discussed and the formalin, copper sulphate, hot water, and "sar" treatments for their prevention outlined.

IOWA STATION, Ames, C. F. Curtiss, Director.

The Value of Corn, Oil Meal, Cotton-seed Meal, and Gluten Feed in Work Horse Rations. By W. J. Kennedy, E. T. Robbins, and H. H. Kildee. (Bulletin 109, pp. 419-445.)

This is a report of the results of experiments conducted in 1907.

Roots and Corn Silage for Fattening Lambs. By W. J. Kennedy, E. T. Robbins, and H. H. Kildee. (Bulletin 110, pp. 451-474, figs. 8.)

This is a report of the results of three years' lamb feeding experiments intended to throw light on the subject of succulence for winter fattening of lambs.

The Apple Leaf-hopper. By R. L. Webster. (Bulletin 111, pp. 5-32, figs. 15.)

This bulletin describes the injury done by the leaf-hopper, states control measures, and gives the life history of the insect in full.

The Influence of Feeding Sugar Beets and Mangels to Breeding Animals, with Special Reference to the Formation of Renal and Urinary Calculi. By L. G. Michael. (Bulletin 112, pp. 35-77, figs. 9.)

The results of digestion and other experiments with animals fed varying rations of hay, grain, and mangels are given and the method followed in the experiments is given in full.

Do Mangels and Sugar Beets Cause Kidney and Bladder Stones?
(Bulletin 112, popular edition, pp. 3-11, figs. 4.)

This is a summary of Bulletin 112 of the Iowa Station and outlines the methods followed during 5 years' experiments and states briefly their results.

Influence of Condimental Stock Foods on the Digestibility of a Corn Ration Fed to Swine. By L. G. Michael et al. (Bulletin 113, pp. 81-119, figs. 2, chart 1.)

The results of a 55-day test of three stock foods are stated in full.

Plum Varieties. By E. E. Little. (Bulletin 114, pp. 121-149, figs. 11.)

Descriptions are given of a large number of plum varieties.

Plum Varieties. By E. E. Little. (Bulletin 114, popular edition, pp. 3-8, figs. 2.)

This is a popular edition of Bulletin 114 of the Iowa Station and deals with plum growing and the selection of varieties. The distinctive culinary characteristics of 15 varieties are stated and brief descriptions given of 20 varieties.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Report of State Forester upon Forest Conditions in Central and Western Kansas. By A. Dickens. (Bulletin 165, pp. 293-355, figs. 37.)

This bulletin reports the results of demonstration plantings of a number of varieties of trees at various points in Kansas.

Spring Grains. By A. M. Ten Eyck. (Bulletin 166, pp. 357-369, figs. 8.)

A report is given of variety tests of oats and barley and the varieties tested are briefly described.

A Quantitative Method for the Determination of Hardness in Wheat. By H. F. Roberts. (Bulletin 167, pp. 371-390, figs. 9.)

This bulletin gives an account of an apparatus designed to determine quantitatively, in terms of the mean crushing point of the kernel, the different degrees of hardness in wheat. Data secured by its use are presented.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Corn. By W. R. Dodson and V. L. Roy. (Bulletin 118, preliminary part, pp. 2-16.)

This bulletin gives directions for selecting, grading, and storing seed corn and preparing exhibits. Rules and regulations for judging are also included.

The Bean Anthracnose. By C. W. Edgerton. (Bulletin 119, pp. 3-55, pls. 14.)

This bulletin gives the results of infection experiments with beans and the germination tests of seeds disinfected by various methods. A bibliography is appended.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 31.)

This contains a report of sugar work at Audubon Park, work at the State Station, and that of the North Louisiana Station, at Calhoun, and of the Rice Experiment Station, at Crowley.

MAINE STATION, Orono, C. D. Woods, Director.

The Mycetophilidæ of North America. By O. A. Johannsen. (Bulletin 172, pp. 209-276, pls. 3.)

This bulletin presents a synopsis of the lower and economically less important subfamilies of fungus gnats, or Mycetophilidæ of North America.

Chermes of Maine Conifers. By Edith M. Patch. (Bulletin 173, pp. 277-308, pls. 14.)

Observations of 7 species of Chermes are reported and full reference to the literature of the subject is given.

Blackleg: A Bacterial Disease of the Stem and Tuber of the Irish Potato. By W. J. Morse. (Bulletin 174, pp. 309-328.)

A bacterial disease of the Irish potato is described, the extent of its prevalence and means of its distribution stated, its economic aspects discussed, and means of prevention and of disinfecting seed potatoes suggested.

Finances, Meteorology, Index. (Bulletin 175, pp. 327-340 + XII, pls. 2.)

This bulletin contains meteorological observations, the report of the treasurer for the year ending December 31, 1909, and an index to Bulletins 164-175, inclusive.

Insect Notes for 1909. By O. A. Johannsen. (Bulletin 177, pp. 21-44, pls. 3.)

This bulletin contains brief accounts of the gipsy and brown-tail moths, San José scale, and other insects important in 1909. Extended descriptions are given of the spindle-worm moth, birch-leaf bucculatrix, apple-leaf sewer, and other insects.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Insects of Field Crops. By R. H. Pettit. (Bulletin 258, pp. 35-84, figs. 51.)

The description and life history of each of a large number of field-crop insects are given and remedies suggested.

Bean Growing. By W. F. Raven. (Bulletin 259, pp. 89-97.)

Directions for the production, harvesting, and marketing of beans in Michigan are followed by information relative to diseases and their prevention or treatment.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

Variations in Cream Tests. By C. H. Eckles. (Circular 37, pp. 13-16.)

A number of causes of variation in cream tests are stated and discussed.

The Principles of Maintaining Soil Fertility. By M. F. Miller. (Circular 38, pp. 17-48, figs. 6.)

The amounts of plant-food elements removed by different farm products, the amounts present in Missouri soils, and the importance of maintaining soil fertility are dealt with in this circular.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Storing Moisture in the Soil. By W. W. Burr. (Bulletin 114, pp. 5-51, figs. 4, charts 13.)

This bulletin reports the results of experiments conducted at the experimental substation at North Platte.

NEW HAMPSHIRE STATION, Durham, W. D. Gibbs, Acting Director.

The Relation of Temperature to the Growth of Insects. By E. D. Sanderson. (Scientific Contributions No. 4, pp. 113-140, figs. 21.)

This is a review of the literature of the subject with a list of authors cited.

NEW YORK CORNELL STATION, Ithaca, H. J. Webber, Acting Director.

The Effect of Fertilizers Applied to Timothy on the Corn Crop Following It. By T. L. Lyon and J. O. Morgan. (Bulletin 273, pp. 55-76, figs. 8.)

This bulletin reports the results of experiments conducted to determine the effect of fertilizers on corn grown in rotation with oats, wheat, and timothy.

Effect of Steam Sterilization on the Water-soluble Matter in Soils. By T. L. Lyon and J. A. Bizzell. (Bulletin 275, pp. 129-155, figs. 12.)

This bulletin presents a review of previous experiments, gives many references to the literature of the subject, and treats of the chemical changes in the soils sterilized under different conditions in the course of the experiments reported.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

A Variety Test of Potatoes. By C. F. Noll. (Bulletin 98, pp. 3-20, figs. 4.)

Variety tests during 1906-1909, inclusive, are reported, and descriptive notes given of some of the varieties tested.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Sugar Cane in Porto Rico. By D. W. May. (Bulletin 9, pp. 7-40, pls. 3.)

This bulletin reports the results of manurial experiments with cane in different parts of Porto Rico and gives the results of numerous other tests in Barbados, Hawaii, and elsewhere. The results of variety tests in Louisiana, Hawaii, and Barbados are summarized. Frequent references to the literature of the subject are given throughout.

Picking and Packing Citrus Fruits. By M. J. Iorns. (Circular 8, Spanish edition, pp. 4-23, figs. 2.)

This is a Spanish edition of Circular 8 of this station, listed in June, 1909. It gives directions for picking, packing, and handling citrus fruits in Porto Rico.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Corn. By C. Willis and H. B. Potter. (Bulletin 118, pp. 613-642, figs. 12.)

Suggestions for the purchase or production, selection, and storing of seed corn are followed by a report of the results of variety tests.

Fattening Lambs. By J. W. Wilson. (Bulletin 119, pp. 645-658.)

The results of experiments to determine the value of alfalfa hay, upland prairie hay, rape pasture, and various grain rations for lambs are reported in this bulletin.

UTAH STATION, Logan, E. D. Ball, Director.

The Improvement of Utah Horses. By J. T. Caine, III, and H. J. Frederick. (Bulletin 107, pp. 101-142, fig. 18.)

This bulletin discusses types desirable for Utah conditions, briefly describes the diseases and unsoundnesses causing disqualification, gives score cards for light and draft horses, the text of the stallion law of Utah, and directories of American and foreign stud books and of licensed pure-bred and grade stallions.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Lime for Virginia Farms. By W. B. Ellett. (Bulletin 187, pp. 3-48, figs. 22.)

Experiments with the use of lime on Virginia soils are reported and directions given for burning and applying lime.

The Use of Lime-sulphur Preparations in the Summer Spraying of Virginia Apple Orchards. By W. M. Scott. (Bulletin 188, pp. 2-16, figs. 8.)

This bulletin gives directions for the making and application of lime-sulphur sprays and reports the results of experimental applications of the sprays.

Fighting the Insect Pests and Diseases of Orchard, Field, and Garden Crops. By H. L. Price. (Circular 7, rev., pp. 2-148, figs. 65.)

Numerous insect pests and diseases are described and methods for their prevention or eradication outlined.

WEST VIRGINIA STATION, Morgantown, J. H. Stewart, Director.

Commercial Fertilizers. By B. H. Hite and F. B. Kunst. (Bulletin 125, pp. 49-102.)

A discussion of commercial fertilizers and fertilizer legislation, followed by a statement of the guaranty and actual analyses of fertilizers of the numerous market brands.

Three Snout Beetles that Attack Apples. By F. E. Brooks. (Bulletin 126, pp. 105-124, pls. 4.)

Descriptions are given of the plum curculio, the apple curculio, and the apple weevil; their habits, life history, and natural enemies are stated, and methods of control are suggested.

Spraying for the Codling Moth. By W. E. Rumsey. (Bulletin 127, pp. 127-140, pls. 2, dgm. 1.)

A preliminary report of experimental sprayings is given and eastern and western methods are compared.

Snout Beetles that Injure Nuts. By F. E. Brooks. (Bulletin 128, pp. 145-185, pls. 6, figs. 10.)

Descriptions are given of a number of snout beetles that injure nuts and of their work. Their life cycles and enemies are stated and suggestions given for the control of the beetles.

WISCONSIN STATION, Madison, H. L. Russell, Director.

The Care of New-born Foals. By A. S. Alexander. (Circular of Information 13, pp. 7.)

Directions are given for the management of the young foal and of the mare prior to parturition.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JUNE, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Butter Scoring Contest, 1909. By H. A. Hopper. (Circular 48, pp. 20, figs. 2.)

A plan of an educational butter-scoring test, the methods followed, and results obtained are stated in full.

Insecticides. By H. J. Quayle. (Circular 49, pp. 2.)

Formulas for use in the preparation of numerous insecticides are given.

Fumigation Scheduling. By C. W. Woodworth. (Circular 50, pp. 24, figs. 14, charts 3.)

An optical method for fumigation scheduling is outlined and its practical application explained.

University Farm School. (Circular 51, pp. 3–22, figs. 10.)

Courses to be given at the University Farm School during 1910–11 are announced.

COLORADO STATION, Fort Collins, C. P. Gillette, Director.

Dry-land Farming in Eastern Colorado. By H. M. Cottrell. (Bulletin 145, pp. 4–32, figs. 4.)

This bulletin is a manual of general information for the use of the prospective dry-land farmer in eastern Colorado.

Carrying Range Steers Through the Winter. Sugar Beets for Fattening Steers. By W. L. Carlyle and G. E. Morton. (Bulletin 149, pp. 3–15, figs. 2.)

The results of tests of methods of wintering yearlings intended for fattening are reported, as well as of experiments to determine the value of sugar beets for fattening steers.

Ration Experiment with Lambs, 1906–7, 1907–8. Self-Feeders for Hay. By W. L. Carlyle and G. E. Morton. (Bulletin 151, pp. 3–8, fig. 1.)

Results are given of two winters' comparisons of the value of cut hay and whole hay as feed for lambs and of one winter's comparison of the utility of self-feeders and ordinary hayracks are given.

Two Common Orchard Mites. By G. P. Weldon. (Bulletin 152, pp. 3-12, figs. 7.)

The life histories of two mites are stated, remedies given, and natural enemies of the red spider described.

Agricultural Products Shipped into Colorado in 1909. By H. M. Cottrell. (Bulletin 153, pp. 4-24.)

Statistical information is given, intended to enable those studying the commercial interests of the State to gauge its progress and determine the conditions which should be improved.

Report of Alfalfa Investigations. By P. K. Blinn. (Bulletin 154, pp. 3-10, figs. 6.)

This is a progress report of an attempt to improve the hay and seed-yielding traits of alfalfa by systematic seed selection.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

Ninth Report of the State Entomologist, 1909. By W. E. Britton. (Biennial Report, 1909-10, pt. 1, pp. VI + 323-374, pls. 16, figs. 9.)

Reports of the expenditures of the year, inspection of nurseries and apiaries and of the municipal spraying of elm trees and of gipsy moth work during 1909-10 are followed by descriptions and life histories of a number of insects and a brief bibliography of each.

CONNECTICUT STORRS STATION, Storrs, L. A. Clinton, Director.

The Cost of Feeding Heifers. By J. M. Trueman. (Bulletin 63, pp. 145-159, figs. 10.)

The actual cost of feeding five typical heifers of the college herd for the first two years of their lives is given. A method of securing photographs of animals by means of which their sizes may be compared is explained.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

Annual Report, 1909. (Annual Report, 1909, pp. XC + XIV, figs. 40.)

This report states methods used and results obtained in experiments in horticulture, animal industry, agronomy, chemistry, entomology, plant pathology, plant physiology, and cooperative work with the United States Department of Agriculture.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Common Insecticides and Fungicides, with Directions for the Treatment of Farm Pests. By H. Garman. (Bulletin 147, pp. 3-39, pls. 12.)

General information on insecticides and fungicides and their application is followed by brief descriptions of many plant diseases, insect pests, and weeds, and a statement of methods of controlling them.

MAINE STATION, Orono, C. D. Woods, Director.

A New Species of Endomyces from Decaying Apple. By C. E. Lewis. (Bulletin 178, pp. 45-64, pls. 7.)

A description of a new species of Endomyces is followed by a statement of the results of inoculating apples with the fungus. The cultural characters are given and the new species compared with others of the same and related genera.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletins 256-257, pp. 4 each.)

Monthly and daily summaries of meteorological data for April and May, 1910, are given.

MISSISSIPPI STATION, Agricultural College, W. L. Hutchinson, Director.

Feeding Beef Steers on Cotton-seed Meal, on Pasture. By J. A. McLean. (Bulletin 136, pp. 11, figs. 5.)

The methods used in the experiment and the gains and financial returns are stated.

Inspection and Analyses of Commercial Fertilizers, 1909-10. (Circular 31, pp. 4-33.)

The mixing of fertilizers is discussed and results of analyses of samples collected by the state chemist presented.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Home Cheese Making. By W. J. Elliott. (Circular 1, pp. 8, figs. 2.)

This circular contains the information necessary for cheese making in the home.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Concentrated Feeding Stuffs. By C. S. Cathcart et al. (Bulletin 230, pp. 3-50.)

This bulletin gives the analyses and other results of the tenth annual inspection of concentrated feeding stuffs sold in New Jersey.

NEW YORK CORNELL STATION, Ithaca, H. J. Webber, Acting Director.

Building Poultry Houses. By J. E. Rice and C. A. Rogers. (Bulletin 274, pp. 81-124, figs. 35.)

A full discussion of the principles involved in the location and construction of poultry houses is followed by specific directions for the construction of houses and pens of various sizes. The materials needed for each are stated.

Peach Leaf Curl. By E. Wallace and H. H. Whetzel. (Bulletin 276, pp. 157-178, figs. 8.)

The literature on peach leaf curl is reviewed, full references are given, and the results of experiments in the use of sprays for the control of the disease are stated.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Potato Spraying Experiments in 1909. By F. C. Stewart et al. (Bulletin 323, pp. 17-52.)

This bulletin states the results of 26 separate experiments conducted during the eighth year's work in a ten-year series of potato spraying tests with Bordeaux mixture.

Potato Spraying Severely Tested. By F. H. Hall. (Bulletin 323, popular edition, pp. 3-8.)

This brief review of Bulletin No. 323 of this station summarizes the results of the first eight years of the ten years' series of experiments in the use of Bordeaux mixture on potatoes and gives results of experiments in 1909.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Food Bulletin 20, pp. 115-130.)

This bulletin discusses preservatives in food and the use of drugs and presents the results of the inspection of foods, whiskies, fruit juices, wines, and other beverages.

Special Bulletin Food Department. (Special Food Bulletin 23, pp. 163-178.)

This bulletin presents the results of analyses of foods, drugs, paints, drinking waters, and other materials; and summarizes the bleached-flour controversy in North Dakota.

OHIO STATION, Wooster, C. E. Thorne, Director.

Specific Effects of Rations on the Development of Swine. By E. B. Forbes. (Bulletin 213, pp. 239-305.)

This bulletin gives the results of two years' feeding experiments conducted at the Missouri Experiment Station. It is issued simultaneously by the Missouri and Ohio stations.

Methods for the Quantitative Estimation of Inorganic Phosphorus in Vegetable and Animal Substances. By E. B. Forbes et al. (Bulletin 215, pp. 459-489.)

Methods are given for the determination of phosphorus as a necessary preliminary to the practical application of results of animal metabolism experiments.

Cooperative Dairy Work. By L. H. Goddard and M. O. Bugby. (Circular 99, pp. 8.)

A year's summary of the records of six herds that have been in cooperation with the station is given.

The Centers of Agricultural Production in Ohio. By L. H. Goddard. (Circular 100, pp. 15, figs. 14.)

The yields of each of the principal farm products of Ohio are given by townships.

OREGON STATION, Corvallis, J. Withycombe, Director.

Commercial Fertilizers and Insecticides. By C. E. Bradley. (Bulletin 107, pp. 16.)

A summary of the state fertilizer law is followed by information relative to certain fertilizers and insecticides, with references to the literature of the subject.

Insecticides and Fungicides: Brief Directions for Their Preparation and Use. By A. B. Cordley. (Bulletin 108, pp. 20.)

This is in effect a revision and reprint of Bulletin 75. Formulas and directions for use in the application of numerous insecticides and fungicides are given.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Experiments in Pig Feeding. By T. I. Mairs and S. W. Doty. (Bulletin 95, rev., pp. 3-16, figs. 5.)

This is a revision of an earlier bulletin of the same title and number. The results of experiments to compare white middlings with a mixture of corn meal and tankage for growing and fattening pigs, including data on slaughter tests, are reported.

The Fertilization of Apple Orchards. By J. P. Stewart. (Bulletin 100, pp. 3-28, pls. 6, dgms. 2.)

This bulletin reports the results of experiments conducted since 1907 in fertilizing orchards.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Farm Management for Controlling Field Crop Insects. By A. F. Conradi. (Bulletin 150, pp. 3-8.)

This bulletin contains information relating to a number of field crop insects and suggestions for their control by crop rotation and other means.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Insuring the Peach Crop. By C. A. Keffer. (Bulletin 88, pp. 25-33, figs. 3.)

The results of experiments with Bordeaux mixture, self-boiled lime and sulphur, and arsenate of lead in 1908-9 are given. Experiments in thinning and in the use of fires for protection against frost are reported.

TEXAS STATION, College Station, H. H. Harrington, Director.

The Chemical Composition of Some Soils of Angelina, Brazoria, Cameron, Cherokee, Delta, Lamar, Hidalgo, Lavaca, Montgomery, Nacogdoches, Robertson, Rusk, Webb, and Wilson Counties. By G. S. Fraps. (Bulletin 125, pp. 6-84, figs. 12.)

This bulletin states the results of physical and chemical studies of a number of Texas soils.

Cotton-seed Meal as Human Food. By G. S. Fraps. (Bulletin 128, pp. 5-15.)

An account is given of the use of cotton-seed flour in the preparation of a number of products for human consumption.

VERMONT STATION, Burlington, J. L. Hills, Director.

The Bacterial Soft Rots of Certain Vegetables. By H. A. Harding and W. J. Morse. (Bulletin 147, pp. 243-360, figs. 10.)

This bulletin is a technical report of the results of an investigation of the soft rots of cabbage, cauliflower, and turnip. It deals with the morphology and cultural characters of 43 strains of organisms and gives frequent references to the literature of the subject.

A Bacterial Soft Rot of Muskmelon Caused by *Bacillus melonis* n. sp. By N. J. Giddings. (Bulletin 148, pp. 363-416, pls. 8.)

This is a technical reference bulletin stating the pathogenesis, morphological, cultural, physical, and biochemical characters of *Bacillus melonis* n. sp. Experimental data are presented, the organism is described, and a bibliography given.

A Practical Method of Killing Witch Grass. By A. J. Eaton and H. A. Edson. (Bulletin 149, pp. 419-447, pls. 12, figs. 8.)

Results of experiments with the method of killing witch grass follow a general discussion of this problem.

The Rôle of Anesthetics and Other Agents in Plant Forcing. By W. Stuart. (Bulletin 150, pp. 451-480, pls. 2, figs. 6.)

The literature of the subject is reviewed, a reference list given, and results of experiments and the forcing of plants with anesthetics are stated.

"Buddy Sap." By H. A. Edson. (Bulletin 151, pp. 483-510.)

A preliminary report upon experiments to determine the micro-organisms occurring in maple sap, their influence upon the quality of sirup, and means of prevention of injury.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

Impurities of Grass and Clover Seed Sold in Virginia. By Gertrude B. De Loach, L. Carrier, and T. B. Hutcheson. (Bulletin 184, pp. 3-18, figs. 14.)

The results of purity and germination tests of red clover, crimson clover, timothy, redtop, and orchard grass are stated and methods of testing described.

Clean and Sanitary Milk. By W. K. Brainerd. (Bulletin 185, pp. 3-22, figs. 16.)

Results are given of experiments to determine the number of bacteria in milk produced under different circumstances and their significance.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

A Preliminary Report on Some Experiments in Clearing Logged-off Land with a Stump Burner. A Promising Method for Destroying Stumps and Logs. By W. H. Lawrence. (Bulletin 93, pp. 3-20, figs. 3.)

The results of experiments are stated.

Chou Moellier, or Marrow Cabbage. By W. H. Lawrence. (Bulletin 95, pp. 5-15, fig. 1.)

This bulletin gives the cultural and other characteristics of a newly introduced crop and states the results of tests of its value.

Hatching and Rearing of Turkeys by Artificial Methods. By H. L. Blanchard. (Bulletin 96, pp. 3-8.)

Directions are given for manipulation of the incubator and brooder and for rearing turkeys and preparing them for market.

Anthraxnose of the Blackberry and Raspberry. By W. H. Lawrence. (Bulletin 97, pp. 3-18, figs. 5.)

The results of cooperative and other experiments are reported. Bluestone solution, milk of lime, and Bordeaux mixture were used in spraying tests.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Licensed Commercial Feeding Stuffs, 1909. By F. W. Woll. (Bulletin 194, pp. 3-94.)

A list of brands of fertilizers licensed for the year ended December 31, 1909, is given with the name and address of the manufacturer. The quality of the feeds is discussed and suggestions are given to purchasers of the feeds.

Factors Controlling the Moisture Content of Cheese Curds. By J. L. Sammis, S. K. Suzuki, and F. W. Laabs. (Research Bulletin 7, pp. 1-72, figs. 27.)

This bulletin gives references to the literature of the subject, states the results of numerous experiments, and discusses the influence of temperature and distribution on separation of whey from curd, of size of cubes, acidity and pressure on the moisture of the curd, the proportion of rennet added to milk, and the influence of varying composition of milk are also dealt with.

Nuclein Synthesis in the Animal Body. By E. V. McCollum. (Research Bulletin 8, pp. 73-93.)

A technical report of the results of nutrition experiments with rats and other animals is given with full references to the literature of the subject.

The Nature of the Acid-soluble Phosphorus Compounds of Some Important Feeding Materials. By E. B. Hart and W. E. Tottingham. (Research Bulletin 9, pp. 95-106.)

A technical account is given of the isolation of phytic acid from corn, oats, and barley, and studies of the soluble phosphorus in ruta-bagas and alfalfa hay. References are given to the literature of the subject.

The Determination of Salt in Butter at the Creamery. By J. L. Sammis. (Circular of Information 14, pp. 7, fig. 1.)

A method of determining the salt content of butter by titration with silver chlorid is fully explained.

Analyses of Licensed Commercial Fertilizers, 1910. By F. W. Woll. (Circular of Information 15, pp. 12.)

A list of commercial fertilizers licensed for sale in the State with the names of manufacturers and guaranties of the content of fertilizer ingredients is accompanied by analyses showing the amounts of these ingredients found.

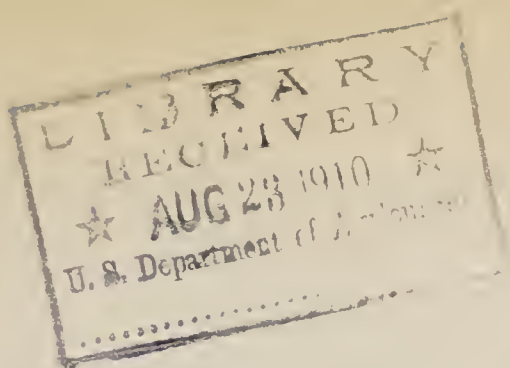
The Culture and Storage of Root Crops. By E. J. Delwiche. (Circular of Information 16, pp. 14, figs. 4.)

General directions for the production, harvesting, and storing of root crops are given.

Twenty-fifth and Twenty-sixth Annual Reports, 1908-9. (Annual Reports, 1908-9, pp. IV + 35 + 52 + 228, pl. 1, figs. 29.)

The reports of the director for the year ended June 30, 1908, and for the year ended June 30, 1909, are followed by reprints of Research Bulletins 1-6.





United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING JULY, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALABAMA TUSKEGEE STATION, Tuskegee Institute, G. W. Carver,
Director.

Nature Study and Gardening for Rural Schools. By G. W. Carver.
(Bulletin 18, pp. 3-23, figs. 11.)

Directions for school gardening and suggestions for the care of school yards are followed by a planting calendar.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Twentieth Annual Report, 1909. (Annual Report 1909, pp. 557-597,
pl. 1.)

An administrative and financial report is followed by progress reports of work in the scientific departments, with a statement of results in botanical investigations with cacti and drought-resistant grasses.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Announcement of Farmers' Short Courses for 1910 at the University
Farm, Davis, California. (Circular 53, pp. 21, figs. 10.)

Courses are announced and the facilities for instruction described.

GEORGIA STATION, Experiment, Martin V. Calvin, Director.

Protein Requirements of Growing Cattle Under One Year of Age.
By P. N. Flint. (Bulletin 90, pp. 87-105, figs. 12, chart 1.)

The results of experiments conducted in 1909-10 are stated.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Quantitative Relationships of Carbon, Phosphorus, and Nitrogen in
Soils. By R. Stewart. (Bulletin 145, pp. 91-127.)

A résumé of the literature of the subject is followed by a statement of results secured at the Illinois Station and a bibliography.

Alfalfa Hay v. Timothy Hay and Alfalfa Hay v. Bran for Dairy Cows. By W. J. Fraser and C. C. Hayden. (Bulletin 146, pp. 131-144, charts 4.)

Results of feeding tests are reported.

INDIANA STATION, Lafayette, A. Goss, Director.

Concentrated Commercial Feeding Stuffs. By W. J. Jones, jr., et al. (Bulletin 141, pp. 167-440.)

The text of the Indiana commercial feeding stuffs law of 1909 is followed by a discussion of its provisions, cases, and rulings under the law, and the results of analyses of a large number of feeds collected.

IOWA STATION, Ames, C. F. Curtiss, Director.

Results of Seed Investigations for 1908 and 1909. By L. H. Pammel and Charlotte M. King. (Bulletin 115, pp. 156-177, fig. 1.)

The results of germination and purity tests of clover and other seeds are given and a new method of making purity tests is described. Full references to the literature of the subject are given.

Two Barley Blights, with Comparison of Species of *Helminthosporium* upon Cereals. By L. H. Pammel, Charlotte M. King, and A. L. Bakke. (Bulletin 116, pp. 179-190, figs. 4.)

Results of inoculation and other experiments with *Helminthosporium gramineum* and *H. sativum* n. sp. are studied and frequent references to the literature of the subject are given.

The Iowa Silo. By J. B. Davidson and M. L. King. (Bulletin 117, pp. 196-266, figs. 50.)

Detailed instructions are given for the construction of a new type of silo and the essentials of silo construction discussed.

The Apple Leaf-hopper. By R. L. Webster. (Bulletin 111, popular edition, pp. 4-12, figs. 3.)

This popular edition of Bulletin 111 describes the work of the apple leaf-hopper, states its life history, and suggests remedial measures.

The Value of Stock Foods for Swine. (Bulletin 113, popular edition, pp. 3-12.)

This is a popular edition of Bulletin 113 of this station by L. G. Michael et al. It reports the results of a 55-day test of International, Iowa, and Standard stock foods.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Rabies—Hydrophobia. By L. W. Goss. (Circular 9, pp. 4.)

A popular discussion of the cause, symptoms, and treatment of rabies is given.

MAINE STATION, Orono, C. D. Woods, Director.

Official Inspections. (Official Inspection 22, pp. 45-56.)

Results of inspections of ice cream, soda water, pork sausage, lard, currants, raisins, pickles, and canned fruits are stated.

Official Inspections. (Official Inspection 23, pp. 57-72.)

The results of analyses of distillers' grains, wheat offals, miscellaneous compounded and other concentrated feeds are given.

MASSACHUSETTS STATION. Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 258, pp. 4.)

Daily and monthly summaries of meteorological observations are given.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Seeds of Michigan Weeds. By W. J. Beal. (Bulletin 260, pp. 104-182, figs. 215.)

This bulletin describes and illustrates the seeds of a large number of weeds, arranging them by families.

Grasshoppers and Their Control. By L. M. Geismar. (Special Bulletin 53, pp. 5-7.)

The Criddle mixture and other means of controlling grasshoppers are discussed.

Lactic Cultures for Dairy Purposes. (Circular 7, pp. 3.)

The nature of lactic cultures is stated and their use discussed.

Tuberculosis. (Circular 8, pp. 59-63.)

General and statistical data on the economic importance of the disease are followed by a discussion of its transmission.

Vinegar and Its Making. (Circular 9, pp. 2.)

Suggestions are given for the control of fermentation in vinegar making.

MISSISSIPPI STATION, Agricultural College, J. W. Fox, Director.

Inspection and Analyses of Cotton-seed Meal on Sale in the State. (Bulletin 128, pp. 31.)

Tables present analyses of 223 samples of cotton-seed meal collected by the state chemist or submitted by manufacturers during the season 1909-10.

Inspection and Analyses of Commercial Feeding Stuffs on Sale in the State. (Bulletins 137, pp. 25; 138, pp. 29.)

These bulletins contain analyses and brief discussions of samples of commercial feeding stuffs and mixed feeds drawn by regular inspectors during the season 1909-10.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

Cooperative Variety Tests of Corn. Variety Tests of Corn at Columbia. By M. F. Miller and H. D. Hughes. (Bulletin 87, pp. 97-158, figs. 12.)

A brief history and description of each of a number of varieties is followed by the results of cooperative variety tests of corn conducted since 1905.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

The Relation of Lime to Soil Improvement. By E. O. Fippin. (Circular 7, pp. 16.)

Data on the physiological, chemical, and physical effects of lime upon the soil are given.

NOTE.—This bulletin is entirely separate from another of the same number listed in June, 1909.

NORTH CAROLINA STATION, West Raleigh, C. B. Williams, Director.

Insects and Fungus Diseases of Apple and Pear. By R. I. Smith and F. L. Stevens. (Bulletin 206, pp. 43-126, figs. 46.)

Insect enemies and fungus diseases of the apple and pear are described, remedial measures suggested, and directions given for the preparation and application of sprays.

Hog Raising in North Carolina. By R. S. Curtis. (Bulletin 207, pp. 133-184, figs. 12.)

Full directions are given for hog raising in North Carolina.

Fig Culture in North Carolina. By F. C. Reimer. (Bulletin 208, pp. 187-206, figs. 13.)

Directions are given for fig production in this State.

OHIO STATION, Wooster, C. E. Thorne, Director.

Illustrative Exhibits at State and County Fairs. By L. H. Goddard and W. A. Lloyd. (Circular 101, pp. 27, figs. 18.)

Exhibits of the experiment station at county fairs are described and discussed.

OREGON STATION, Corvallis, J. Withycombe, Director.

Fire Blight of Pear and Apple. By H. S. Jackson. (Circular Bulletin 7, pp. 3-16, figs. 9.)

This bulletin contains general information on fire blight, with directions for the control and prevention of the disease.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Annual Report, 1909. (Annual Report, 1909, pp. 21+371, pls. 31, figs. 16.)

The reports of the president, treasurer, and director for the year ended June 30, 1909, are followed by those of the different departments of the station. A reprint of Bulletin 91, an amplification of Bulletin 92, and a reprint of portions of Bulletin 95 are given. Special topics treated in other articles are: The effect of continued use of different fertilizers, influence of moisture on hay yields, concentrated *v.* bulky rations, cost of production of tobacco, analyses of domestic manures, soil variations, lighting farm houses, and methods and standards in bomb calorimetry. A list of the publications of the station is given.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

On the "Sick" Soils of Porto Rico. By O. Loew. (Circular 12, pp. 5-24.)

The results of examinations of coffee, cane, and tobacco sick soils are stated with frequent references to the literature of the subject.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Alfalfa. By C. Willis and J. V. Bopp. (Bulletin 120, pp. 661-682.)

General directions for alfalfa production in South Dakota are followed by a progress report of a test of a number of varieties with a brief history of each.

TEXAS STATION, College Station, H. H. Harrington, Director.

Active Phosphoric Acid and its Relation to the Needs of the Soil for Phosphoric Acid in Pot Experiments. By G. S. Fraps. (Bulletin 126, pp. 7-72, figs. 2, charts 4.)

This bulletin deals with the subject in a technical manner and is intended primarily for scientific readers.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Forest, Shade, and Ornamental Trees in Washington. By W. S. Thornber. (Bulletin 90, pp. 55, figs. 8.)

Suggestions for improving rural homes by means of forest and shade trees are followed by notes on the growth of many trees at this station.

Wheat and Flour Investigations (Crops of 1906-7). By R. W. Thatcher. (Bulletin 91, pp. 3-31.)

Analyses are given of numerous samples of wheat of different varieties grown in 1906-7.

Cherries in Washington. By W. S. Thornber. (Bulletin 92, pp. 32, figs. 10.)

Directions for cherry production in Washington are followed by notes on a large number of varieties grown at that station.

Forage Plants for Western Washington. By W. H. Lawrence and H. L. Blanchard. (Bulletin 2, Special Series, pp. 5-45.)

Directions are given for the production in western Washington of root crops, cabbage, kale, legumes, grains, grasses, and potatoes. Many references to other experiment station publications are given.

Root Diseases Caused by *Armillaria melea* in the Puget Sound Country. By W. H. Lawrence. (Bulletin 3, Special Series, pp. 3-16, figs. 5.)

The fungus is described, its development, injury, and distribution discussed, and means of identifying and combating the disease stated.

Club-root of Cabbage and Allied Plants. By W. H. Lawrence. (Bulletin 5, Special Series, pp. 3-17, figs. 8.)

This bulletin discusses the disease, its prevention and control, and states the results of inoculation experiments, tests of fungicides and fertilizers as preventives, and gives references to the literature of the subject.

Nineteenth Annual Report, 1909. (Annual Report, 1909, pp. 4-15.)

The lines of work pursued by each of the departments of the station are stated.

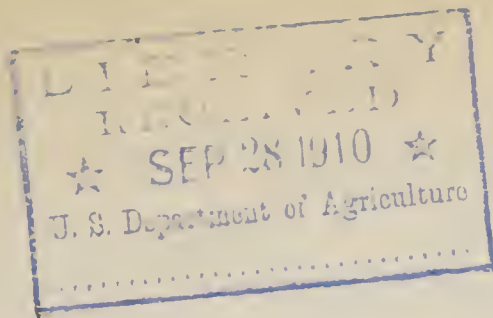
WYOMING STATION, Laramie, H. G. Knight, Director.

Feeding Experiments, 1909-10. By A. D. Faville. (Bulletin 85, pp. 3-12, figs. 2.)

This bulletin states the results of experiments, comparing corn and barley with emmer, and alfalfa with native hay for lamb feeding, and corn with barley for growing cattle.







United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING AUGUST, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ALASKA STATIONS. Sitka, C. C. Georgeson, Special Agent in Charge.

Annual Report, 1909. (Annual Report, 1909, pp. 82, pls. 10.)

Reports are given of work done with fruits, vegetables, grains, and grasses at the different Alaska stations and of the station herd at the Kodiak Station.

CALIFORNIA STATION. Berkeley, E. J. Wickson, Director.

Some Creamery Problems and Tests. By L. M. Davis. (Circular 54, pp. 14.)

Overrun, starter making, coloring, acidity, salting, moisture testing, Marshall's and Mann's acid tests, and Farrington's alkaline tablet test are discussed in this circular.

Farmers' Institutes and University Extension in Agriculture. By W. T. Clarke. (Circular 55, pp. 4.)

General information with regard to the extension of the institute work of the university.

COLORADO STATION. Fort Collins, C. P. Gillette, Director.

Clean Milk and Commercial Starters as Factors in Butter Making. By W. G. Sackett. (Bulletin 156, pp. 4-14.)

General information and directions for the making and use of starters are given, with references to the literature of the subject.

Arsenical Poisoning of Fruit Trees. By W. P. Headden. (Bulletin 157, pp. 3-56, figs. 14.)

The results of investigations of orchards treated with arsenical sprays are stated.

A Bacterial Disease of Alfalfa. By W. G. Sackett. (Bulletin 158, pp. 3-32, pls. 3.)

A statement of the history, distribution, and cause of the disease is followed by a description of the causal organism and a statement of its cultural, physical, and biochemical features. The results of plant inoculation and field experiments are given.

Stem Blight: A New Bacterial Disease of Alfalfa. By W. G. Sackett. (Bulletin 159, pp. 3-15, pl. 1.)

This is an abbreviated edition of Bulletin No. 158, noted above.

Nitrates in the Soil. By W. P. Headden. (Bulletin 160, pp. 3-8.)

This is an explanation of so-called "black alkali" or "brown spots."

Materials Used in Constructing Cement and Concrete Fence Posts. By H. M. Bainer and H. B. Bonebright. (Bulletin 161, pp. 3-20, figs. 2.)

This is an abbreviated edition of Colorado Bulletin No. 148. Directions are given for the making of poured and tamped posts and the results of experiments of different kinds of wire as reinforcement stated.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Story of a King and Queen. (Circular 145, pp. 16, figs. 4.)

This circular teaches in story form, for children, the value of limestone and phosphorus in growing corn and clover.

INDIANA STATION, Lafayette, A. Goss, Director.

Standards for Evaporated Milk, Sweetened Condensed Milk, and Condensed Skim Milk. Federal and State Dairy Laws. By O. F. Hunziker. (Bulletin 143, pp. 477-507, figs. 2.)

This bulletin gives the text of the Pure Food and Drugs Act and states the federal standard for dairy products, discussing their effect on the condensed-milk industry.

Commercial Fertilizers. By W. J. Jones, jr., E. G. Proulx, and C. W. Rice. (Bulletin 148, pp. 631-726, fig. 1.)

This bulletin contains the summary of the Indiana fertilizer law and the results of eight years of inspection and of the analyses of a large number of fertilizers.

How to Grow More and Better Wheat. (Circular 23, pp. 40, figs. 18.)

Directions are given for wheat production and the results of fertilizer tests reported.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Provisions of the State Forest Law. By C. A. Scott. (Circular 10, pp. 4.)

This circular gives the text of a law establishing a division of forestry at the State College and providing for the cooperation of the state forester in forest planting.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Analyses of Commercial Fertilizers. (Bulletin 146, pp. 301-409.)

Analyses of fertilizers are presented in tabular form.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Some Sugar-cane Diseases. By C. W. Edgerton. (Bulletin 120, pp. 3-28, figs. 12.)

This bulletin deals with the spread, effects, and control of some sugar-cane diseases and the organisms causing them.

Rough Rice as Feed for Horses and Mules. By W. H. Dalrymple. (Bulletin 122, pp. 3-8, fig. 1.)

The results of a test of ground rough rice as a feed for mules are stated.

MAINE STATION, Orono, C. D. Woods, Director.

Poultry Notes, 1909. By R. Pearl and F. M. Surface. (Bulletin 179, pp. 65-124, pls. 5, figs. 5.)

A report on work in growing green food for poultry in winter is followed by notes on inheritance of breed characteristics by hybrids and a discussion of the control of lice.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Green Crops for Summer Soiling. By J. B. Lindsey. (Bulletin 133, pp. 3-20.)

The best green fodders and fodder combinations for summer silage in Massachusetts are described, and methods for growing them are outlined. A table gives their composition and digestibility.

The Hay Crop. By W. P. Brooks. (Bulletin 134, pp. 68, figs. 3.)

This is a reprint of a portion of Bulletin No. 3 of the Massachusetts State Board of Agriculture. It reports the results of experiments and gives directions for the production of clover and other hay crops.

Meteorological Observations. By J. E. Ostrander and R. N. Hallowell. (Meteorological Bulletin 259, pp. 4.)

Monthly and daily summaries of meteorological data are given.

Alfalfa as a Crop in Massachusetts. By W. P. Brooks. (Circular 18, pp. 4, fig. 1.)

Directions are given for the production of alfalfa in Massachusetts.

The White Fly. By C. E. Hood. (Circular 19, pp. 2.)

Directions are given for combating the white fly.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Spray and Practice Outline for Fruit Growers. By H. J. Eustace and R. H. Pettit. (Special Bulletin 51, pp. 16, fig. 1.)

Suggestions for spraying orchard fruits, small fruits, vineyards, and potatoes are followed by directions for the preparation of fungicides and insecticides.

Corn Production in the Upper Peninsula of Michigan. By L. M. Geismar. (Special Bulletin 52, pp. 5-8.)

This is the first of a series of bulletins intended to furnish detailed information of a practical character as an aid to the farmer.

MISSISSIPPI STATION, Agricultural College, J. W. Fox, Director.

Boll Weevil in Mississippi, 1909. By R. W. Harned. (Bulletin 139, pp. 43, figs. 28.)

The status of the boll weevil in the different counties of the State at the close of the season 1909 is followed by the life history of the weevil and a brief description of each of a number of insects frequently mistaken for it.

MISSOURI STATION, Columbia, F. B. Mumford, Director.

Inspection of Commercial Fertilizers. By P. F. Trowbridge. (Bulletin 85, Sup., folio.)

This supplement contains analyses omitted from Bulletin 85.

An Experimental Study of the Rest Period in Plants. By W. L. Howard. (Research Bulletin 1, pp. 5-105.)

This is an initial report on the treatment of dormant woody plants for forcing them into growth by controlling the temperature and by special treatment with ether, chloroform, and other agents.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Structure of Tomato Skins. By B. H. A. Groth. (Bulletin 228, pp. 3-20, pls. 8.)

This bulletin deals with the cell structure of the fruit skins of nine types of tomatoes.

NEW YORK CORNELL STATION, Ithaca, H. J. Webber, Acting Director.

Apple Orchard Survey of Niagara County. By J. Craig and M. B. Cummings. (Bulletin 262, pp. 279-320, figs. 15.)

Data collected during the summer of 1905-7 are presented in tables.

The Principles of Brooding. The Improved New York State Gasoline-heated Colony-house Brooding System. By J. E. Rice and C. A. Rogers. (Bulletin 277, pp. 183-217, figs. 27.)

A statement of the principles of brooding and brooder construction is followed by the details of the construction of the New York State colony-house and gasoline heater.

Classification of the Peony. By L. D. Batchelor. (Bulletin 278, pp. 219-298.)

A horticultural classification is followed by descriptions of a number of varieties of peonies.

Variation and Correlation in Timothy. By C. F. Clark. (Bulletin 279, pp. 301-350, figs. 12, charts 9.)

Three years' observations are reported.

Pastures in New York. By P. J. White, I. P. Roberts, and G. F. Warren. (Bulletin 280, pp. 355-397, pl. 1, figs. 14.)

This bulletin contains 4 papers. Various pastures in New York are discussed, the characters of the principal pasture grasses briefly stated, and the results of sowings of a number of pasture mixtures given. A table presents the cost of pasture land in different States.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Constancy of Certain Physiological Characters in the Classification of Bacteria. By H. A. Harding. (Technical Bulletin 13, pp. 3-41.)

This gives a technical discussion of a brief method of classifying bacteria.

Orchard Management. By U. P. Hedrick. (Circular 11, pp. 13.)

Some suggestions are made for use in pruning and handling orchards.

Dwarf Apples. By U. P. Hedrick. (Circular 12, pp. 8.)

A progress report is given of a test of dwarf apple trees for commercial orchards.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Windbreaks and Hedges. By C. B. Waldron. (Bulletin 88, pp. 3-11, pls. 9.)

Directions are given for choosing and planting trees for windbreaks.

Second Annual Report of the Dickinson Sub-Experiment Station for the Year 1909. (Annual Report Dickinson Substation, 1909, pp. 78, figs. 10, charts 7.)

A report is given of inoculation, endurance, and other tests of alfalfa and of experiments with rotations, soil moisture, hay, clover, corn, emmer, wheat, potatoes, trees, and shrubs.

OHIO STATION, Wooster, C. E. Thorne, Director.

A Brief Handbook of the Diseases of Cultivated Plants in Ohio. By A. D. Selby. (Bulletin 214, pp. 307-456+VII, figs. 106.)

Plant pathology is discussed, remedies are outlined, and many diseases described. A bibliography is added.

Minor Items of Farm Equipment. By L. H. Goddard and L. W. Ellis. (Circular 98, pp. 18.)

This circular is based on inventories of the minor equipment of 33 farms.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Soils and Fertilizers. By T. E. Keitt. (Bulletin 151, pp. 3-35.)

This bulletin contains information on feeding stuffs, manures, and fertilizers, and a discussion of the adaptation of crops to certain South Carolina soils.

Hog Cholera and the Serum Method of Treatment. By E. Barnett. (Bulletin 152, pp. 3-14.)

The results of inoculations with serum from a hyperimmune animal are stated.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Growing Sugar Beet Seed in South Dakota. By J. H. Shepard. (Bulletin 121, pp. 685-698, figs. 2.)

This is a continuation of Bulletin 117 and contains a progress report of work with sugar beets.

Factors Affecting Acidity of Creamery Butter and The Acid Test as a Measure of Deterioration of Butter. By C. Larsen, T. H. Lund, and L. F. Miller. (Bulletin 122, pp. 701-730, figs. 6.)

A report of the results of the experiments to determine the effects of various methods of handling cream and butter on acidity is followed by suggestions on handling separators and cream.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 93-114, figs. 5.)

Reports of the director and the various officers of the station are accompanied by statements of the results obtained in entomology, horticulture, and immunization work for the control of hog cholera.

TEXAS STATION, College Station, H. H. Harrington, Director.

Commercial Feeding Stuff. By J. W. Carson and G. S. Fraps. (Bulletin 127, pp. 5-104.)

This is a second report of the operation of the amended Texas feeding-stuff law and contains analyses of cotton seed, rice, and cereal products sold for feeding stuffs.

VIRGINIA STATION, Blacksburg, S. W. Fletcher, Director.

The Efficiency of Hand Separators. By W. K. Brainerd and W. L. Mallory. (Bulletin 186, pp. 3-20, figs. 10.)

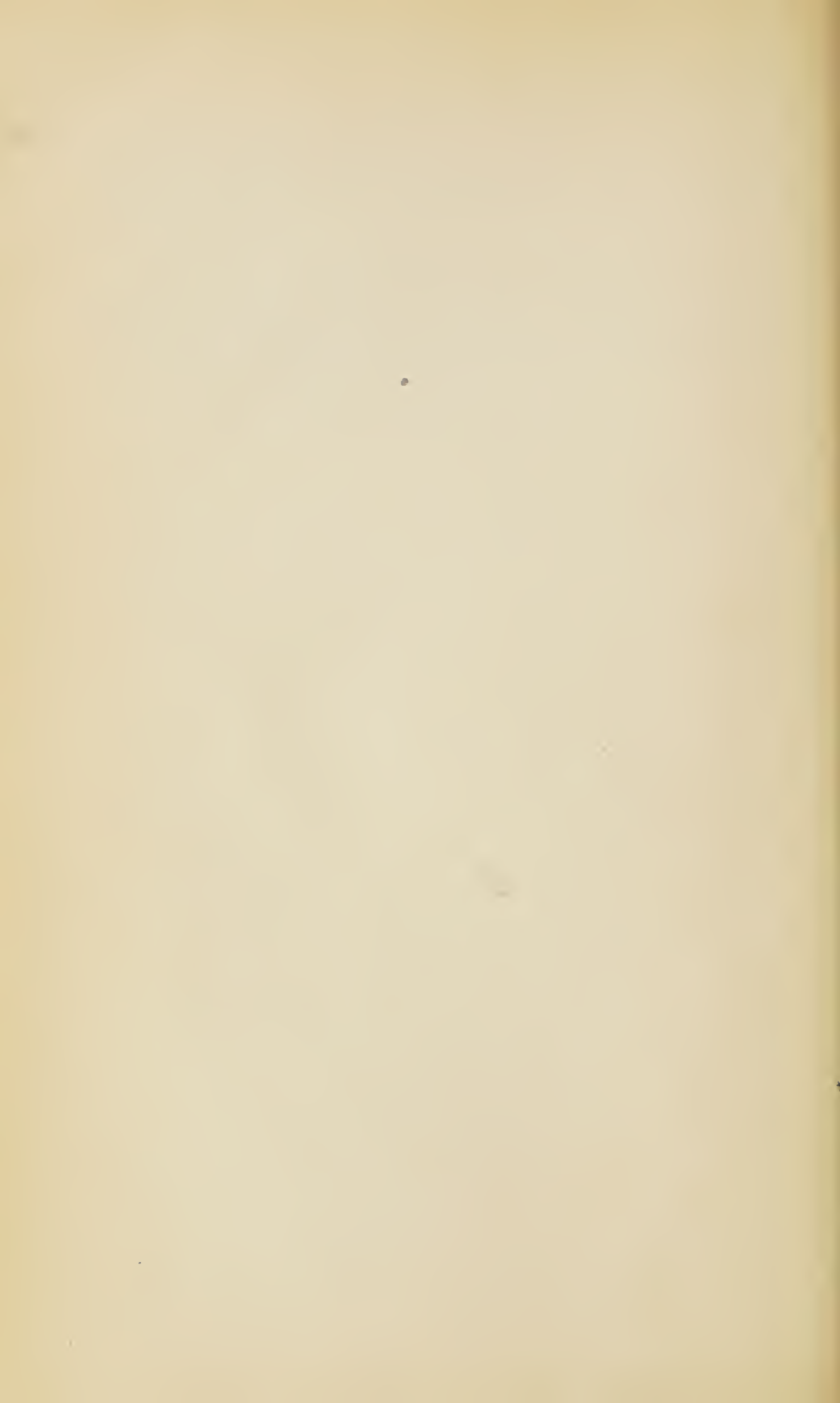
A report is given of the power required and results obtained in tests of a number of separators.

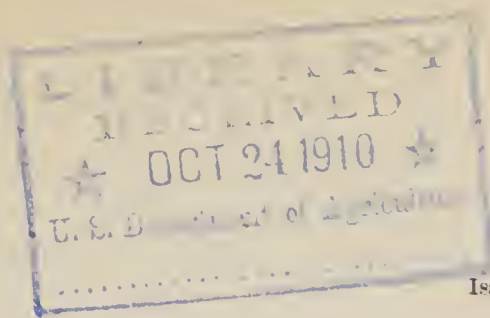
WISCONSIN STATION, Madison, H. L. Russell, Director.

Draft Horse Judging. By A. S. Alexander. (Circular of Information 17, pp. 26, figs. 26.)

Directions for scoring draft horses are followed by descriptions and illustrations of the more common unsoundnesses.







Issued October 25, 1910.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING SEPTEMBER, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

ARIZONA STATION, Tucson, R. H. Forbes, Director.

Ground-water Supply and Irrigation in the Rillito Valley. By G. E. P. Smith. (Bulletin 64, pp. 81-244, pls. 5, figs. 58.)

This bulletin gives the topography, geology, and history of the Rillito Valley. Studies are given of the rainfall, run-off, and storage reservoirs of the valley, the results of underflow tests stated, and the logs of twenty-five wells, followed by studies of the water table, ground-water supply, individual pumping plants, and the Rillito cooperative project.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Information for Students Concerning the College of Agriculture of the University of California. By E. B. Babcock. (Circular 52, pp. 8.)

This circular announces and briefly describes the courses of the College of Agriculture.

Announcement of Farmers' Short Courses in Animal Industry and Veterinary Science at the University Farm, Davis, California, October 17 to November 4. (Circular 57, pp. 13, pl. 1, figs. 2.)

This circular announces and briefly describes short courses in animal industry and veterinary science.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Market Classes and Grades of Meat. By L. D. Hall. (Bulletin 147, Abstract, pp. 2-15, figs. 4.)

This abstract of Bulletin No. 147 gives a table of the different market classes and grades of dressed beef, veal, mutton, lamb, and pork. The different cuts are described and illustrated.

The Hessian Fly in Illinois, 1910. By S. A. Forbes. (Circular 146, pp. 4.)

This circular states the life history of the Hessian fly and suggests preventive measures.

INDIANA STATION, Lafayette, A. Goss, Director.

Finishing Steers, 1907-1909. By J. H. Skinner and W. A. Cochel. (Bulletin 142, pp. 443-474.)

This bulletin gives the results of experiments in finishing 2-year-old steers, in short feeding cattle for the 1908 international, and comparing dry lot and pasture feeding for finishing yearlings.

Influence of Age on the Economy and Profit of Feeding Calves, Yearlings, and 2-year-olds. By J. H. Skinner and W. A. Cochel. (Bulletin 146, pp. 599-608, figs. 7.)

Three years' experiments are reported.

Corn Silage for Winter Feeding of Ewes and Young Lambs. By J. H. Skinner and W. W. Smith. (Bulletin 147, pp. 611-628, fig. 1.)

Three years' experience in feeding corn silage to ewes and lambs at the University farm is reported.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Common Mole. By T. H. Scheffer. (Bulletin 168, pp. 36, figs. 12.)

This bulletin reports results of examinations of the stomach contents of moles and of their bird enemies. Studies of the habits of the mole are followed by suggestions for their control and for the prevention of injury to corn or other crops.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

The Sugar-cane Mealy-bug. By J. B. Garrett. (Bulletin 121, pp. 3-19, figs. 7.)

This bulletin gives a description and life history of the sugar-cane mealy-bug, suggests means of control, and discusses its natural enemies and diseases.

MAINE STATION, Orono, C. D. Woods, Director.

The Mycetophilidæ of North America, II. By O. A. Johannsen. (Bulletin 180, pp. 125-192, pls. 4.)

This bulletin gives a table of species and numerous descriptions of the fungus gnats of North America.

Gall Aphids of the Elm. By Edith M. Patch. (Bulletin 181, pp. 193-240, pls. 13.)

The literature of the subject is reviewed and full bibliographies are given.

Four Rare Aphid Genera from Maine. By Edith M. Patch. (Bulletin 182, pp. 241-248, pls. 6.)

This bulletin describes and reports observations on the plant lice *Sipha glyceriæ*, *Mindarus abietinus*, *Syndobius oblongus*, and *Mastopoda pteridis*. Bibliographies are given.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Tuberculosis of Animals. By S. S. Buckley. (Bulletin 145, pp. 267-314, figs. 2.)

This bulletin contains general information on tuberculosis, its diagnosis, detection, spread, treatment, and prevention. The results of tests of bovovaccination are stated.

Poultry House Construction and its Influence on the Domestic Fowl, I. By C. L. Opperman. (Bulletin 146, pp. 31, figs. 13.)

Experiments in feeding, poultry-house construction, winter egg production, and the influence of construction on the vitality of the developing embryo are reported and the types of houses used described.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and R. N. Hallowell. (Meteorological Bulletin 260, pp. 4.)

Monthly and daily summaries for August are given.

The Use of Lime in Massachusetts Agriculture. By W. P. Brooks. (Circular 20, pp. 6.)

This circular contains a discussion of the effect of liming on soil and crops, and directions for the determination of the proper form of lime, if any, to apply to a given soil.

The Control of Onion Smut. By G. E. Stone. (Circular 21, pp. 2, figs. 2.)

Directions are given for the use of lime and sulphur in the control of onion smut.

Poultry Manures, Their Treatment and Use. By W. P. Brooks. (Circular 22, pp. 4.)

Analyses of poultry manure are followed by directions for its preservation and use.

A Parasite of the Asparagus Beetle. By H. T. Fernald. (Circular 23, pp. 2.)

Observations of the parasite of the asparagus beetle are reported.

Cotton-seed Meal. By J. B. Lindsey. (Circular 25, pp. 7, fig. 1.)

This is a revision of Circular No. 1. It outlines the manufacture and uses of cotton-seed meal, discusses its deterioration, and gives methods of sampling for analysis.

Fertilizers for Potatoes. By W. P. Brooks. (Circular 26, pp. 4.)

This is a revision of Circular No. 14. Directions for mixing and using potato fertilizers are given.

Seeding Mowings. By W. P. Brooks. (Circular 27, pp. 8, figs. 3.)

This is a revision of Circular No. 16. Directions for the preparation, fertilization, and seeding of meadows is followed by a discussion of varieties of grasses and clover to be used.

MINNESOTA STATION, University Farm, St. Paul, A. F. Woods, Director.

The Cost of Producing Minnesota Farm Products, 1902-1907. By E. C. Parker and T. P. Cooper. (Bulletin 117, pp. 3-64, figs. 4.)

This bulletin contains statistical data on the price and yields of farm products, wages paid, rate of farm board, depreciation of farm machinery, and cost of production of the principal farm crops and live stock.

Potato Experiments and Studies at University Farm in 1909. By A. R. Kohler. (Bulletin 118, pp. 67-141, figs. 7.)

A classification of varieties and descriptions of a few varieties are followed by reports of the results of tests of sprays, commercial fertilizers, and the proper size of cuttings of seed tubers.

Poultry: Northwest Experiment Farm at Crookston, Minn. By C. E. Brown. (Bulletin 119, pp. 141-175, figs. 19.)

Directions for making poultry houses is followed by a discussion of breeds, feeding, dressing, marketing, and other practical topics.

Rye Growing in Minnesota. By A. Boss. (Bulletin 120, pp. 3-8, figs. 2.)

The results of variety tests and directions for rye production in Minnesota are given.

MISSISSIPPI STATION, Agricultural College, J. W. Fox, Director.

Control of Diseases of Fruits, Vegetables, and Flowers. By H. C. Thompson. (Bulletin 141, pp. 30, figs. 21.)

Directions are given for the control of many plant diseases.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Sixteenth Annual Report, 1909. (Annual Report, 1909, pp. 59-83.)

A brief statement of the expenditures of the station for the past year is followed by a review of the work of its different departments.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Twenty-third Annual Report, 1909. (Annual Report, 1909, pp. XXXII + 139, figs. 12.)

The director's review of the experimental work of the station and the expenditures of funds is followed by an appendix reporting observations on the inoculation of alfalfa on Nebraska upland soils, nitrogen in dried unground cereals, the color, ash, and strength of Nebraska flour, the breaking strength and ash of hog bones, the relation of nitrogen content of alfalfa to inoculation, prussic acid in sorghum and maize, abortion in cattle, tuberculosis, a new form of wheat, soil moisture, hog cholera, and transpiration of the corn plant.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

The Second Season with the Peach Orchard. By M. A. Blake. (Bulletin 231, pp. 3-41, pls. 16.)

This gives directions for the management of the peach orchard during its second season.

NEW MEXICO STATION, Agricultural College, L. Foster, Director.

Twentieth Annual Report, 1909. (Annual Report, 1909, pp. 41.)

This report of the director deals with the scientific work of the departments of the experiment station.

NEW YORK CORNELL STATION, Ithaca, H. J. Webber, Acting Director.

Butter Moisture Tests. By H. E. Ross. (Bulletin 281, pp. 401-413.)

The chemical gravimetric, Gray, Irish, Farrington, and Cornell butter moisture tests are described.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Inspection of Feeding Stuffs. (Bulletin 324, pp. 53-143.)

The results of analyses of samples of feeding stuffs submitted by the commissioner of agriculture during 1909-10 for analysis at the experiment station are presented.

NORTH CAROLINA COLLEGE STATION, West Raleigh, C. B. Williams, Director.

Self-sterility of the Scuppernong and Other Muscadine Grapes. By F. C. Reimer and L. R. Detjen. (Bulletin 209, pp. 5-23, figs. 13.)

The results of studies in pollination of Scuppernong and other Muscadine grapes are reported.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.
Special Bulletin Food Department. (Special Food Bulletin 25, pp. 195-210.)

Analyses and discussions of many food and drug products are given.

Report on Service Condition of Paints. By J. Dewar and E. F. Ladd. (Paint Bulletin 4, pp. 56, dgms. 4.)

A statement of the condition of numerous paints under test on buildings and fences.

OHIO STATION, Wooster, C. E. Thorne, Director.

Spraying to Kill Weeds—Some Useful Methods. By A. D. Selby. (Circular 102, pp. 6.)

General information on the use of sprays for weeds.

Autumn Meeting of the Ohio State Horticultural Society, Little Hocking, September 17, 1909. (Circular 103, pp. 20.)

Addresses and discussions.

Plans and Summary Tables of the Experiments at the Central Farm, Wooster, on the Maintenance of Soil Fertility. (Circular 104, pp. 20, dgms. 5.)

Diagrams show the plans and tables state the results of fertilizer experiments.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Meadows and Pastures. By T. F. Hunt. (Bulletin 101, pp. 3-16, figs. 3.)

A report of the results of different fertilizer applications and references are given.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Sugar Cane in Porto Rico. By D. W. May. (Bulletin 9, Spanish edition, pp. 7-44, pls. 3.)

This is a Spanish edition of Bulletin 9 of this station. It reports the results of manurial experiments with cane in different parts of Porto Rico and gives the results of numerous other tests in Barbados, Hawaii, and elsewhere. The results of variety tests in these countries are summarized. Frequent references to the literature of the subject are given.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

Abstracts of Feeding Experiments. Analyses of Feeding Stuffs. By B. L. Hartwell. (Bulletin 140, pp. 105-133.)

Abstracts of eleven bulletins on feeding experiments conducted at nine different stations are followed by analyses of feeding stuffs.

Blackhead in Turkeys: A Study in Avian Coccidiosis. By L. J. Cole, P. B. Hadley, and W. F. Kirkpatrick. (Bulletin 141, pp. 137-271, pls. 12.)

A brief history of blackhead in turkeys is followed by a statement of its distribution and prevalence. Its symptoms are described, its etiology given, and methods of transmission, dissemination, prevention, and treatment stated. A full bibliography of the subject is appended.

Blackhead in Turkeys. By L. J. Cole, P. B. Hadley, and W. F. Kirkpatrick. (Bulletin 141 [Abstract], pp. V-XIV, pl. 1.)

This is an abstract of the above.

UTAH STATION, Logan, E. D. Ball, Director.

The Effect of Formalin on the Vitality of Seed Grain. By R. Stewart and J. Stephens. (Bulletin 108, pp. 145-156.)

Investigations of other stations are reviewed and the results of new experiments reported.

VIRGINIA TRUCK STATION, Norfolk, T. C. Johnson, Director.

Spinach Troubles at Norfolk and Improvement of Trucking Soils. By L. L. Harter. (Bulletin 4, pp. 61-80, figs. 5.)

This bulletin gives directions for the increase of humus by means of stable manure, various green manuring crops, and crop rotations, with special reference to spinach diseases on trucking soils. Frequent references are given to authorities quoted.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Practical Poultry Buildings. By H. L. Blanchard. (Bulletin 4, Spec. Ser., pp. 3-29, figs. 19.)

This bulletin gives illustrations, plans, specifications, and lists of materials required for the construction of incubator, brooder, and laying houses, and the colony coop.

WISCONSIN STATION, Madison, H. L. Russell, Director.

Methods of Renting Farm Lands in Wisconsin. By H. C. Taylor. (Bulletin 198, pp. 3-30, figs. 2.)

Various forms of tenancy are discussed from the economic standpoint.

Some Improved Methods of Dairy Chemistry Analysis. By E. B. Hart, S. K. Suzuki, and J. L. Sammis. (Research Bulletin 10, pp. 107-125.)

This contains three papers dealing with the volumetric method for the estimation of casein in milk, the estimation of lactic acid in Cheddar cheese, and the relation of different acids to the precipitation of casein and of the solubility of cheese curds in salt solutions.

The Production of Volatile Fatty Acids and Esters in Cheddar Cheese and Their Relation to the Development of Flavor. By S. K. Suzuki, E. G. Hastings, and E. B. Hart. (Research Bulletin 11, pp. 127-154.)

This bulletin deals with the organisms and chemical analysis of milk, the flavor solution, and the analysis of cheese of different ages. References are given to the literature of the subject.

Some Factors Concerned in the Fixation of Nitrogen by Azotobacter. By C. Hoffmann and B. W. Hammer. (Research Bulletin 12, pp. 155-172, figs. 2.)

This states the results of studies of pure and impure cultures with special reference to nitrogen fixation under various conditions. References to the literature of the subject are given.

United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING OCTOBER, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Report of the Plant Pathologist and Superintendent of Southern California Stations, July 1, 1906, to June 30, 1909. By R. E. Smith. (Bulletin 203, pp. 5–63, figs. 23.)

A report is given of work on diseases of nuts, fruits, vegetables, field crops, and trees of different varieties.

DELAWARE STATION, Newark, H. Hayward, Director.

Crimson Clover Culture. By A. E. Grantham. (Bulletin 89, pp. 36, figs. 4.)

A discussion of the adaptability of crimson clover to Delaware conditions is followed by directions for its cultivation and a summary of the practical experience of 200 farmers in its growth.

ILLINOIS STATION, Urbana, E. Davenport, Director.

Market Classes and Grades of Meat. By L. D. Hall. (Bulletin 147, pp. 153–290, figs. 80.)

This bulletin describes and illustrates the standard classes and grades of dressed meats recognized in the Chicago markets. Technical terms are defined.

INDIANA STATION, Lafayette, A. Goss, Director.

Growing Tomatoes for the Canning Factory. By J. Troop, C. G. Woodbury, and J. G. Boyle. (Bulletin 144, pp. 511–528, figs. 8.)

A discussion of the soil requirements of tomatoes is followed by directions for growing the plants, transplanting, cultivation, and harvesting. Information is also given on yields, profits, varieties, diseases, and insect pests.

Testing Cream for Butter Fat. O. F. Hunziker et al. (Bulletin 145, pp. 531–595, figs. 18.)

Full directions for the use of the Babcock test are given with special reference to the elimination of inaccuracies in methods.

Information on Work of Purdue Experiment Station and School of Agriculture. (Circular 24, pp. 48, figs. 43.)

The work of each department is described and illustrated.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Fertilizers and their Use. By J. T. Willard, C. O. Swanson, and R. C. Wiley. (Bulletin 169, pp. 37-97.)

This bulletin contains general information of value to the farmer in the purchase, mixing, and use of commercial fertilizers.

Breeding for Type of Kernel in Wheat, and its Relation to the Grading and Milling of the Grain. By H. F. Roberts. (Bulletin 170, pp. 99-138, figs. 7, charts 19.)

This bulletin presents data collected and observations made in breeding wheat for the proper ratio of length to width of kernel.

Studies on Hog Cholera and Preventive Treatment. By W. E. King and R. H. Wilson. (Bulletin 171, pp. 139-195, figs. 8, charts 32.)

The results of experiments with hyperimmune serum are reported.

The Relation of Size, Weight, and Density of Kernel to Germination of Wheat. By J. G. Lill. (Circular 11, pp. 8.)

The object of the investigation reported "was to determine the relation of the size, weight, and density of the kernel to the germination of wheat."

Treatment of Seed Wheat for Smut. By H. F. Roberts and P. W. Graff. (Circular 12, pp. 4.)

Directions are given for the treatment of the loose and stinking smuts of wheat and for combining the two treatments.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Bakeries, Bakery Supplies, and Bakers' Products. (Food Inspection Regulation 7, pp. 14.)

A part of the text of the Kentucky food and drugs act is stated and followed by regulations governing bakeries, bakery supplies, and bakers' products.

MAINE STATION, Orono, C. D. Woods, Director.

Official Inspections. (Official Inspection 24, pp. 73-84.)

The results of inspections of currants, raisins, mustard, cream of tartar, canned vegetables, salt, oysters, and condensed and evaporated milk are stated.

Official Inspections. (Official Inspection 25, pp. 85-88.)

This circular contains the Maine food and drug regulations relating to shellfish, eggs, compressed yeast, and dressed poultry.

MARYLAND STATION, College Park, H. J. Patterson, Director.

Wheat—Variety Tests and Diseases. By N. Schmitz. (Bulletin 147, pp. 33-45.)

The results of wheat variety tests are followed by directions for the treatment of wheat smuts.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 261, pp. 4.)

Monthly and daily summaries are followed by remarks upon the weather of the month.

An Act to Provide for the Protection of Dairymen. The Babcock Test. By P. H. Smith. (Circular 24, pp. 8.)

The text of an act for the protection of dairymen is followed by directions for the use of the Babcock test.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Suggestions on Planting Orchards. By O. K. White. (Bulletin 262, pp. 29, figs. 9.)

A discussion of the choice of soil and site for an orchard is followed by directions for laying out, planting, and caring for orchards in Michigan.

Spraying Calendar. By L. R. Taft. (Special Bulletin 45, rev., folio.)

This is a spraying calendar for use in Michigan.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

A Study of the Cause of Wide Variations in Milk Production by Dairy Cows. By C. H. Eckles and O. E. Reed. (Research Bulletin 2, pp. 107-147, figs. 2.)

This bulletin reports a comparative study of the dairy records made by two half sisters similarly fed and managed, with special reference to the relation between ration and milk yield.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Ornamental Trees and Shrubs for Montana. By R. W. Fisher. (Bulletin 80, pp. 4-46.)

A discussion of the selection and value of ornamentals is followed by a statement of the ornamental value of each of a large number of trees and shrubs. Experimental data with regard to some species are presented.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

Report of Analyses of Samples of Commercial Fertilizers Collected by the Commissioner of Agriculture during 1910. (Bulletin 325, pp. 145-247.)

The names of the fertilizers analyzed, their manufacturer, and guaranteed and actual analyses are presented in tabular form.

PORTO RICO STATION, Mayaguez, D. W. May, Special Agent in Charge.

Annual Report, 1909. (Annual Report, 1909, pp. 43, pls. 3.)

The investigations of the year are summarized and the reports of the physiologist, horticulturist, entomologist, chemist, coffee expert, plant pathologist, and assistant animal husbandman are presented in full.

SOUTH CAROLINA STATION, Clemson College, J. N. Harper, Director.

Notes on Varieties of Tomatoes. By C. C. Newman. Tomato Diseases. By H. W. Barre. (Bulletin 153, pp. 3-36, pls. 8.)

A statement of the qualities of fruits of many tomato varieties is followed by a description of each of a number of diseases and a statement of remedies.

TENNESSEE STATION, Knoxville, H. A. Morgan, Director.

Twentieth Annual Report, 1907. (Annual Report, 1907, pp. 16, fig. 1.)

Progress reports of the director, botanist, chemist, and agronomist, field expert in dairying, horticulturist, veterinarian, and librarian are given.

Twenty-first Annual Report, 1908. (Annual Report, 1908, pp. 109-128, fig. 1.)

This report presents progress reports of each of the officers of the station and the results of investigations in its different departments.

TEXAS STATION, College Station, H. H. Harrington, Director.

Alkali Soils. Irrigation Waters. By G. S. Fraps. (Bulletin 130, pp. 5-28.)

Studies of the relation between certain alkalis in the soil and the growth of fruit trees and field crops are given in this bulletin.

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United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING NOVEMBER, 1910.

NOTE.—These publications are not distributed by the Department of Agriculture, but can usually be obtained, as far as the supply will permit, by applying to the stations issuing them.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Commercial Fertilizers. By J. S. Burd. (Bulletin 206, pp. 51.)

The results of the work of the California fertilizer control for the year ended June 30, 1910, are stated.

COLORADO STATION, Fort Collins, C. P. Gillette, Director.

Rabies. By G. H. Glover and B. F. Kaupp. (Bulletin 162, pp. 3-8, figs. 4.)

This bulletin states the history and distribution of rabies in the United States and in Colorado, describes the disease, states its cause, and suggests precautions for its treatment, control, and eradication.

Farm Butter Making. By H. M. Bainer. (Bulletin 163, pp. 3-16, figs. 8.)

The topics dealt with are the dairy, dairy utensils, methods of skimming, ripening, and churning the cream, and of working and preparing the butter for market.

Poultry Raising. By W. E. Vaplon. (Bulletin 164, pp. 3-16.)

A statement of considerations governing the location of the poultry farm and choice of breeds is followed by suggestions on feeding, incubation, rearing chicks, marketing, keeping records and accounts, and plans for buildings.

Ration Experiments with Swine, 1906-1908. By W. L. Carlyle and G. E. Morton. (Bulletin 165, pp. 3-23, figs. 2.)

The experiments reported compare alfalfa hay, wheat, field peas, wheat shorts, and tankage as protein sources for use with barley or corn in hog feeding.

Information Concerning the Colorado Carriage Horse Breeding Station. By J. O. Williams. (Bulletin 166, pp. 3-12, figs. 5.)

This bulletin outlines the history and object of the experimental breeding at the Colorado Carriage Horse Station, states the type desired and the conditions governing entries, judging, and showing at the various state fairs. Tabulated pedigrees of the stallions used are given.

Life and Care of Farm Machinery in Colorado. By H. M. Bainer and H. B. Bonebright. (Bulletin 167, pp. 3-19, figs. 8.)

Suggestions are made for the selection of machinery, adjustment and repairs, the equipment of the farm workshop, and for housing and painting farm machinery. The results of investigations of farm conditions are stated. Plans for implement houses are given.

Growing Broom Corn in Colorado. By A. Keyser. (Circular 9, pp. 16.)

This circular contains general information on the soils and regions adapted to broom-corn growing and makes suggestions as to choice of varieties, preparation of land, planting, cultivation, harvesting, tabling, cutting, sorting, thrashing, handling, and marketing.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. 66.)

The financial report for the year ended June 30, 1909, is followed by progress reports of the members of the station staff.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Cabbage Culture. By H. P. Stuckey. (Bulletin 91, pp. 107-129, figs. 17.)

This bulletin reports the results of tests of nitrate of soda and cottonseed meal formulas for fall and winter cabbages. Tests of time of sowing seed, setting plants in the field, and the maximum amount of nitrate of soda suitable for use as side dressing and of variety tests are also reported. Full directions are given for the production of cabbage in Georgia and for combating its insect enemies.

KANSAS STATION, Manhattan, E. H. Webster, Director.

The Pocket Gopher. By T. H. Scheffer. (Bulletin 172, pp. 197-233, figs. 14.)

This is a revision of Bulletin 152. The common gopher (*Geomys bursarius*) is described, and its distribution, breeding, feeding, and burrowing habits, the damage done to various crops, and its natural enemies are treated. Gopher legislation, poisoning, trapping, fumigation, and trap guns are discussed.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Seed-Testing Apparatus. A Study of Conditions under which our Germination Tests are Made. (Bulletin 148, pp. 47-62, pl. 1, figs. 8.)

The apparatus used is described and the conditions under which tests were made briefly stated.

The Preservation of Drugs. By L. A. Brown. (Bulletin 150, pp. 127-178.)

A part of the text of the Kentucky food and drugs act of March 13, 1908, is followed by directions for the keeping and compounding of crude drugs, chemicals, preparations, and miscellaneous drugs.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Some Experiments in Grazing and Soiling. By S. E. McClendon. (Bulletin 123, pp. 3-16.)

This bulletin reports the results of experiments testing the value of oats, rice polish, Dwarf Essex rape, sweet potatoes, cottonseed meal, stock beets, rutabagas, turnips, carrots, sorghum, and corn meal as feed for hogs. Certain crops were tested both for pasturage or field feeding and soiling or hand feeding. Sheep were also used on oats pasture.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 262, pp. 4.)

Monthly and daily summaries are followed by remarks on the weather of the month.

Twenty-second Annual Report, 1910. (Annual Report, 1910, pt. 1, pp. 257, pls. 6, figs. 2.)

A detailed report of the year's work in the departments of the experiment station.

Twenty-second Annual Report, 1910. (Annual Report, 1910, pt. 2, pp. 78.)

This is a general report of the work of the experiment station and consists largely of special articles by members of the staff.

MISSOURI STATION, Columbia, F. B. Mumford, Director.

Soil Management in the Ozark Region. By M. F. Miller. (Bulletin 88, pp. 163-189, figs. 9, map 1.)

Discussions of the analyses and management of Ozark soils and border Ozark soils are followed by recommendations of forage and other crops adapted to the region. A soil map is given.

Soils of the Ozark Region. C. F. Marbut. (Research Bulletin 3, pp. 157-273, pl. 1, map. 1.)

The soils of the Ozark region are classified and described and the agricultural possibilities of the region along various lines discussed. A soil map is given.

Feeding for Milk Production. By C. H. Eckles. (Circular 44, pp. 69-84, figs. 5.)

This is a popular bulletin dealing with the proper adjustment of the dairy ration of different animals in seasons and conditions.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

The Determination of Humus. By F. J. Alway, E. K. Files, and R. M. Pinckney. (Bulletin 115, pp. 3-25.)

This bulletin compares the Hilgard, Huston-McBride, Cameron-Breazeale, and Mooers-Hampton methods for the determination of humus in arid, semiarid, and humid soils. Frequent references to the literature of the subject are given.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Artificial Coloring in Food Products. (Circular 8, p. 1.)

This circular states the artificial colors which may legally be used in foods and drugs sold in Nevada.

Use of Benzoate of Soda and Cereals in Meat Products. (Circular 9, p. 1.)

A statement of the provision of the State food and drug act relative to the labeling of meat products containing benzoate of soda and cereals is followed by a resolution of the board of control of the experiment station on this point.

Ice-Cream Cones. (Circular 10, p. 1.)

A provision of the State food and drug act relative to the use of saccharin is stated and a resolution of the board of control of the experiment station relative to the sale of ice-cream cones sweetened with saccharin is presented.

Vinegar. (Circular 11, p. 1.)

The term vinegar is defined and some regulations governing its sale in Nevada are stated.

NEW HAMPSHIRE STATION, Durham, J. C. Kendall, Director.

The Box Pack for Apples. By W. H. Wicks. (Circular 8, pp. 6, figs. 7.)

Directions are given for packing apples in boxes.

Alfalfa in New Hampshire. By F. W. Taylor. (Circular 9, pp. 4.)

Directions are given for alfalfa production in New Hampshire.

NEW JERSEY STATIONS, New Brunswick, E. B. Voorhees, Director.

Contribution to the Study of Bordeaux Injury on Peaches. By B. H. A. Groth. (Bulletin 232, pp. 3-19, pls. 2.)

Bordeaux injury was studied with special reference to variations in humidity, amount of mixture applied, and the method of mixing.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Seven Methods of Feeding Young Chickens. By J. E. Rice and Clara Nixon. (Bulletin 282, pp. 417-462, figs. 25.)

The experiments reported test the efficiency, for chick rearing, of seven different rations and methods of feeding. Work on incubation and brooding is also reported.

NORTH CAROLINA COLLEGE STATION, West Raleigh, C. B. Williams, Director.

Improved Methods for Making Cottage and Neufchatel Cheese. By J. Michels. (Bulletin 210, pp. 29-38, figs. 8.)

Directions are given for making, packing, and marketing cottage and neufchatel cheese.

Feeding and Management of Poultry for Egg Production. By J. S. Jeffrey. (Bulletin 211, pp. 43-64, figs. 8.)

Discussions of the selection and feeding of the flock and the essentials of a good ration, are followed by a statement of the results of experiments in the cost of egg production with various rations. Corn meal, wheat bran, wheat middlings, bone meal, meat meal, and cottonseed meal were tested in different combinations and proportions.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Food Bulletin 26, pp. 211-226.)

Bread wrapping and the size of loaf are discussed and the results of inspections of ice cream, beverages, and other food products are stated.

OHIO STATION, Wooster, C. E. Thorne, Director.

Sow Wheat a Little Late this Fall. By H. A. Gossard. (Press Bulletin 317, p. 1.)

It is suggested that wheat be sowed later than usual this year to avoid loss from the Hessian fly.

Treat Seed Wheat for Smut. By A. D. Selby. (Press Bulletin 318, p. 1.)

Directions are given for treatment of wheat seed with formalin.

Small Tools on the Farm. (Press Bulletin 319, p. 1.)

This bulletin states some conclusions based on inventories of 33 farms and announces Circular 98 of the station which stated more fully the results of the same investigation.

OKLAHOMA STATION, Stillwater, J. A. Wilson, Director.

The San José Scale and a Disease for Controlling It. By C. E. Sanborn. (Press Bulletin 179, p. 1.)

This contains directions for the utilization of a fungus disease of San José scale and states conditions under which the station will distribute it.

OREGON STATION, Corvallis, J. Withycombe, Director.

Productive Qualities of Fowls. By J. Dryden. (Circular 10, pp. 16.)

This is a lecture given before the Graduate School of Agriculture at the Iowa State College, July 10. It discusses pure breeds and fancy points as related to productive qualities.

PENNSYLVANIA STATION, State College, T. F. Hunt, Director.

Methods of Fattening Steers. By W. A. Cochel and S. W. Doty. (Bulletin 102, pp. 3-16, figs. 4.)

The value of shelter for silage-fed cattle is discussed and a comparison made of concentrated and bulky rations and of heavy and light rations of corn silage.

The Lighting of Farm Houses. By I. T. Osmond. (Bulletin 103, pp. 19, figs. 8.)

Kerosene, gasoline, acetylene, and alcohol as illuminants are compared and the results of experimental tests of each and of different forms of burners are stated.

TEXAS STATION, College Station, H. H. Harrington, Director.

Studies of the Ammonia-soluble Organic Matter of the Soil. By G. S. Fraps and N. C. Hamner. (Bulletin 129, pp. 7-49.)

This is a technical report of results obtained in the estimation of humus by various methods, investigations into the formation of humus, and its composition and properties.

Hog Feeding Experiments. By J. C. Burns. (Bulletin 131, pp. 7-33, figs. 14.)

The experiments herein reported tested the value of black strap molasses, Indian corn, skim milk, rice bran, and Spanish peanuts for fattening hogs. Improved, were compared with "scrub" or "razor-back" hogs for economical pork production.

Commercial Fertilizers in 1909-10. By G. S. Fraps. (Bulletin 133, pp. 4-18, fig. 1.)

A summary of the state fertilizer and insecticide law is followed by directions for taking samples and a tabular statement of the analyses of commercial fertilizers made during the season of 1909-10. Tables state the guaranteed analysis and that of the manufacturer's sample, farmer's sample, and inspector's sample, and the valuation on the basis of each of these analyses.

VERMONT STATION, Burlington, J. L. Hills, Director.

Principles and Practice of Ice Cream Making. By R. M. Washburn. (Bulletin 155, pp. 3-92.)

A history of the ice cream industry and a discussion of its importance are followed by classification of ice creams, discussion of each of their essential characteristics and constituents, and of the various fillers and binders used. A statement is given of the different types of freezers and the important points to be observed in freezing, transferring, hardening, rehardening, refreezing, and shipping. Formulas for making each of the principal kinds of ice cream are followed by a considerable amount of miscellaneous information and a brief bibliography.

WISCONSIN STATION, Madison. H. L. Russell, Director.

Opportunities for Profitable Farming in Northern Wisconsin. By E. J. Delwiche. (Bulletin 196, pp. 3-34, figs. 26.)

This contains suggestions for new and prospective settlers on 10,000,000 acres of northern Wisconsin farm land. Directions are given for the production of farm crops and live stock.

Methods of Paying for Milk at Cheese Factories. By S. M. Babcock, E. H. Farrington, and E. B. Hart. (Bulletin 197, pp. 3-24, fig. 1.)

The desirability of basing the purchase of milk for cheese-making on casein and fat determinations is discussed in the light of experimental data.

The Principles and Practice of Land Drainage. By E. R. Jones. (Bulletin 199, pp. 3-30, figs. 15.)

Directions are given for land drainage and its principles discussed with special reference to Wisconsin conditions.

The Curing and Testing of Seed Corn. By R. A. Moore. (Circular of Information 18, pp. 12, figs. 10.)

Directions for curing small and large lots of seed corn and making germination tests accompany plans for a corn-curing house.

The Control of Quack Grass and Canada Thistles. By A. L. Stone. (Circular of Information 19, pp. 13, figs. 5.)

Descriptions of quack grass and the Canada thistle are followed by directions for their eradication.



United States Department of Agriculture,

OFFICE OF EXPERIMENT STATIONS.

A. C. TRUE, Director.

LIST OF STATION PUBLICATIONS RECEIVED BY THE OFFICE OF EXPERIMENT STATIONS DURING DECEMBER, 1910.

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ALABAMA COLLEGE STATION, Auburn, J. F. Duggar, Director.

The Boll Weevil Advance in Alabama. By W. E. Hinds. (Circular 5, pp. 6.)

This circular outlines the history of the boll weevil in the United States and its life history. Suggestions are given for the production of a cotton crop in spite of the presence of the weevil.

Fighting the Boll Weevil. By W. E. Hinds. (Circular 6, pp. 7.)

The feeding and other habits of the boll weevil are discussed and rotation, cultural, and other methods suggested.

Destroying Boll Weevils by Clean Farming. By W. E. Hinds. (Circular 7, pp. 8.)

The habits of the boll weevil are discussed with especial reference to the eradication of the pest by clean farming methods.

CALIFORNIA STATION, Berkeley, E. J. Wickson, Director.

Distribution of Seeds and Plants. By E. J. Wickson and R. E. Mansell. (Seed Bulletin 1910-11, pp. 4.)

This bulletin gives data of the seed distribution during 1903-1910, and announces the flower and vegetable seeds now on hand for distribution.

Worthless Fertilizers. By J. S. Burd. (Circular 56, pp. 2.)

This circular discusses the results of an investigation of the fertilizing value claimed for various natural rocks and mineral deposits.

COLORADO STATION, Fort Collins, C. P. Gillette, Director.

Milo. By A. Keyser and H. M. Cottrell. (Circular 7, pp. 16, fig 1.)

Directions for growing milo are followed by a discussion of its use as a feed for beef and dairy cattle, calves, hogs, sheep, and poultry.

Growing Potatoes in Colorado. By C. L. Fitch. (Circular 8, pp. 22, figs. 10.)

The topics discussed include trueness to type, potato growing in Colorado, the essentials of a good eating potato, choice of varieties, seed selection, running out, rotation and plowing, planting, cultivation, irrigation, harvesting, storing the most desirable size of potatoes for seed, and dry land and high altitude seed potatoes. A number of varieties are described.

CONNECTICUT STATE STATION, New Haven, E. H. Jenkins, Director.

The Management of Tobacco Seed Beds. By W. M. Hinson and E. H. Jenkins. (Bulletin 166, pp. 3-11, fig. 1.)

This bulletin is part of cooperative work done jointly by the Bureau of Plant Industry and the Connecticut Station. It discusses the use of fertilizers, apparatus for steam sterilizing, the object and operation of sterilizing, the use of formaldehyde, rate of seeding, use of sprouted seed and tobacco water, the watering and ventilation of the seed beds, and the "calico" disease.

Report on Commercial Fertilizers, 1910. By E. H. Jenkins and J. P. Street. (Biennial Report, 1909-10, pt. 5, pp. 375-454.)

Tables and descriptive text discuss the analyses and other results obtained from the investigation of natural and artificial fertilizers.

FLORIDA STATION, Gainesville, P. H. Rolfs, Director.

White Fly Control. By E. W. Berger. (Bulletin 103, pp. 28, figs. 2.)

The injury due to the white fly and its life history are briefly summarized, methods of control by fungus diseases and insecticides are discussed at length, and the results of spraying experiments stated.

Pineapple Culture, VII. Nitrates in the Soil. By A. W. Blair and R. N. Wilson. (Bulletin 104, pp. 33-51, figs. 2.)

Discussions of sources of nitrogen and nitrates from humus are followed by a statement of the plan adopted and results obtained in experiments on the effects of different kinds and amounts of fertilizers on the formation of nitrates, and the effects of moisture, temperature, and growth of plants. Soil analyses indicate the nitrates and total nitrogen found in soil layers at various depths.

GEORGIA STATION, Experiment, M. V. Calvin, Director.

Variety Test of Cotton and Corn, 1910. By M. V. Calvin. (Circular 66, pp. 2.)

Tables state without comment the results of variety tests of corn and cotton.

ILLINOIS STATION, Urbana, E. Davenport, Director.

The Illinois Competitive Cow Test. By C. C. Hayden. (Circular 144, pp. 12.)

A competitive cow test, the plan of competition, rules governing it, and the prizes offered are announced.

INDIANA STATION, Lafayette, A. Goss, Director.

Standards for Evaporated Milk, Sweetened Condensed Milk and Condensed Skim Milk. Federal and State Dairy Laws. By O. F. Hunziker. (Bulletin 143, popular edition, pp. 15, fig. 1.)

This bulletin gives the text of the pure food and drugs act and the State and Federal standards for dairy products, discussing their effect on the condensed-milk industry.

Testing Cream for Butter Fat. By O. F. Hunziker. (Bulletin 145, popular edition, pp. 3-22, figs. 15.)

Directions are given for the use of the Babcock test. Special apparatus and methods for the elimination of inaccuracies are suggested.

KANSAS STATION, Manhattan, E. H. Webster, Director.

Meningo-encephalitis (blind staggers). By T. P. Haslam. (Bulletin 173, pp. 235-251.)

A statement of the symptoms of blind staggers (meningo-encephalitis) is followed by discussions of its cause, its relation to corn-stalk disease and pellagra, and of molds attacking Kansas corn. A report is given of cultural experiments with the organisms and of experiments in feeding moldy corn. Suggestions for the prevention and cure of the disease are followed by a bibliography.

Registered Feeding Stuffs. (Feeding Stuffs Bul. 10, pp. 4.)

A list of names of registered feeds and of the names and addresses of their manufacturers is followed by a statement of some regulations governing the registration and sale of feeds in Kansas.

Registered Feeding Stuffs. (Feeding Stuffs Buls. 12-16, pp. 4 each.)

In each of these bulletins regulations governing the registration and sale of feeding stuffs in Kansas are followed by a part of the text of the law on these subjects and a list of the names of feeds registered and the names and addresses of their manufacturers.

How to Grow Black Walnuts. By C. A. Scott. (Circular 13, pp. 3.)

Directions are given for gathering and planting the seed and caring for the seedlings.

Contagious Abortion. By K. W. Stouder. (Circular 14, pp. 3.)

The causes and treatment of the disease are fully discussed.

KENTUCKY STATION, Lexington, M. A. Scovell, Director.

Bleached Flour. By R. M. Allen. (Bulletin 149, pp. 65-124)

This bulletin reports the results of an investigation of the views of 65 Kentucky millers on the purpose and effect of the bleaching practice in milling and in the trade. The exact definition of patent, straight, clear, and other grades was sought. A portion of the findings of the United States district court of the eastern district of Louisiana against bleached flour is followed by the charge of the jury and the verdict against bleached flour in another case tried in a United States district court.

An Outbreak of Gadflies in Kentucky. By H. Garman. (Bulletin 151, pp. 181-192, pls. 2, figs. 6.)

A discussion of an outbreak of the gadfly in an unusual locality is followed by suggestions for treatment, a description of the fly, and a refutation of the belief that it produces bots or warbles.

LOUISIANA STATIONS, Baton Rouge, W. R. Dodson, Director.

Report of Analyses of Commercial Fertilizers and Paris Green. By J. E. Halligan. (Fertilizer Report, 1909-10, pp. 76.)

Complete fertilizers, fertilizers not tankage, but containing nitrogen and phosphoric acid, fertilizers containing phosphoric acid and potash, acid phosphates and superphosphates, bone meals, tankage, cottonseed meal, nitrate of soda, and potash minerals are discussed. Under each a table states their classification and average analyses. A summary of the fertilizer control work of the past five years is followed by directions for the calculation of repairs and the valuation of fertilizers. Tables give the guaranteed and actual analyses of fertilizers during 1909-10.

MAINE STATION, Orono, C. D. Woods, Director.

Experiments in Breeding Sweet Corn. By R. Pearl and F. M. Surface. (Bulletin 183, pp. 249-316, pls. 8, figs. 6.)

This bulletin describes types of Maine sweet corn, states the results of experimental work in 1907-8, of an ear-to-row test in 1909, and of plat and farm distribution tests. Practical suggestions are made with regard to the growing of sweet corn for packing and for seed.

Digestion Experiments with Poultry. By J. M. Bartlett. (Bulletin 184, pp. 317-336, figs. 2.)

This bulletin states the methods used and results obtained in digestion experiments with corn, wheat bran, clover, India wheat, ether extract of wheat, crude fiber, and the admixture of 7 per cent bone ash with vegetable ration.

Official Inspections. (Official Inspection 26, pp. 89-96.)

Headache remedies are discussed, and the results of inspection and analyses stated in tabular form.

MASSACHUSETTS STATION, Amherst, W. P. Brooks, Director.

Meteorological Observations. By J. E. Ostrander and C. M. Damon. (Meteorological Bulletin 263, pp. 4.)

Monthly and daily summaries for November, 1910, are followed by remarks on the weather during the month.

MICHIGAN STATION, East Lansing, R. S. Shaw, Director.

Baby Beef Production. By H. W. Norton, jr. (Bulletin 261, pp. 185-213, figs. 5.)

Results are given of experiments comparing two methods of producing baby beef. By one method the calves were reared from birth on skim milk with supplementary feed, and by the other, fed in the natural manner and with supplementary feed.

Fertilizer Analyses. By A. J. Patten, O. B. Winter, and C. G. Clippert. (Bulletin 263, pp. 33-74.)

A statement of the results of analyses of commercial fertilizers for 1910 is accompanied by summaries of the Michigan fertilizer law and the results of the inspection. Commercial valuations and the agricultural use of commercial fertilizers are dealt with.

Varieties of Fruit Originated in Michigan. By S. W. Fletcher. (Special Bulletin 44, pp. 3-87, figs. 32.)

Qualities which should be developed in new varieties of apples, pears, peaches, strawberries, blackberries, raspberries, and gooseberries for Michigan are quoted from farmers' letters. Varieties of these and other fruits that have originated in Michigan are described and their histories stated.

MISSISSIPPI STATION, Agricultural College, J. W. Fox, Director.

Cotton Diseases in Mississippi. By R. P. Hibbard. (Bulletin 140, pp. 3-27, figs. 8.)

General discussions of plant diseases, their symptoms, causes, losses, and relations to fungi, bacteria, and physical condition are followed by information on the occurrence, symptoms, cause, and remedies of cotton wilt, anthracnose, rust, damping off, root knot, galls, nematodes, root rot, and the shedding of bolls. Briefer discussions are given of red rust, areolate mildew, and the cotton-leaf blight. A reference list of 67 titles is appended.

Cotton Diseases in Mississippi. By R. P. Hibbard. (Bulletin 140-B, pp. 16, figs. 8.)

This is a reprint of that portion of the above which deals especially with wilt, anthracnose, rust, and other diseases. No reference list is given.

MISSOURI COLLEGE STATION, Columbia, F. B. Mumford, Director.

The Seeding of Cowpeas. By M. F. Miller. (Circular 39, pp. 49-52, fig. 1.)

This popular circular deals with varieties of cowpeas, time and methods of seeding, harvesting, and thrashing, and the adaptability of the crop to growth with corn.

The Seeding of Alfalfa. By C. B. Hutchison. (Circular 40, pp. 53-56.)

Suggestions are made for inoculation, use of lime, seeding, harvesting, cultivation, and the choice of soil.

Directions for Testing Milk on the Farm. By H. E. McNatt. (Circular 41, pp. 57-60, figs. 8.)

Directions for sampling, testing, and reading the test are accompanied by a discussion of the use of the acid and other essentials to the successful use of the Babcock test.

The Seeding of Clovers and Grasses. By M. F. Miller. (Circular 42, pp. 61-64.)

This popular circular discusses the merits of timothy and clover and other meadow and pasture mixtures, orchard grass, various fertilizers, and the free testing of seeds at the experiment station.

Wheat Growing in Missouri. By F. H. Demaree. (Circular 43, pp. 65-68, fig. 1.)

A discussion of soil and wheat varieties is followed by directions for sowing, fertilization, and prevention of injury by smut and insect enemies.

MONTANA STATION, Bozeman, F. B. Linfield, Director.

Seventh Annual Report of the State Entomologist of Montana. By R. A. Cooley (Bulletin 79, pp. 52-58.)

This bulletin states the principal insects observed, the injuries to forest trees reported, publications and public addresses of the entomologist, policy regarding publications, and the expenditures of the year.

NEBRASKA STATION, Lincoln, E. A. Burnett, Director.

Economical Beef Production. By H. R. Smith. (Bulletin 116, pp. 52, figs. 15.)

This bulletin reports the results of experiments in testing the economy of beef production as affected by the feed and by the animal. The feeds tested were corn, cottonseed cake, linseed meal, bran, alfalfa, and shredded corn stover. Smoothness, compactness, heart girth, middle girth, breed, and the general type of the animal were considered as affecting the economical utilization of food.

NEVADA STATION, Reno, J. E. Stubbs, Director.

Annual Report of the Board of Control, the Director and the Members of the Station Staff, 1909. (Bulletin 72, pp. 58, pls. 3.)

The director's financial report is followed by complete accounts of the work done by the various station departments under the Hatch and Adams funds.

A Neglected Field in Photomicrography. By S. B. Doten. (Bulletin 73, pp. 9-15, pls. 4, fig. 1.)

This bulletin outlines a method of photographing opaque objects as they appear under a simple microscope and describes the apparatus used.

NEW HAMPSHIRE STATION, Durham, J. C. Kendall, Director.

Breeding and Selection of Corn. By F. W. Taylor. (Circular 10, pp. 8, figs. 2.)

Full directions are given for the purpose of enabling the farmer to conduct ear-row work for the improvement of corn.

NEW YORK CORNELL STATION, Ithaca, L. H. Bailey, Director.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. LX + 71-517 + 16 + 16, pls. 41, figs. 134.)

The president's letter giving a brief progress report of each of the departments of the station is followed by a financial report, the director's report on the several departments, and a reprint of Bulletins 259-269 and Circulars 4-7.

NEW YORK STATE STATION, Geneva, W. H. Jordan, Director.

The Fermentation of Citric Acid in Milk. By A. W. Bosworth and M. J. Prucha. (Technical Bulletin 14, pp. 43-48.)

This bulletin reports the results of investigations of the power of *Bacterium lactis aerogenes* to transform citric acid in milk into acetic acid and carbon dioxide.

NORTH CAROLINA COLLEGE STATION, West Raleigh, C. B. Williams, Director.

Prevention of Oat and Wheat Smut. By F. L. Stevens. (Bulletin 212, pp. 75-84, figs. 2.)

This bulletin contains general information with regard to the smuts of oat and wheat, and their prevention by means of bluestone, hot water, and formalin. References are given to the literature of the subject.

NORTH DAKOTA STATION, Agricultural College, J. H. Worst, Director.

Special Bulletin Food Department. (Special Food Bulletin 24, pp. 179-194, fig. 1.)

Analyses of a number of whiskies are accompanied by a discussion of the same and of sirups, the exposure of fruits, explosive stove polish, cold storage, adulterated linseed oil, coatings of confectionery, canned tomatoes, durum flour, pellagra, coal-tar colors, and other topics. The results of tests of the blending or milling of durum and hard spring wheats are reported.

OREGON STATION, Corvallis, J. Withycombe, Director.

A Preliminary Report on the Vegetable Growing Industry in Oregon. By A. G. B. Bouquet. (Bulletin 109, pp. 3-48, figs. 13.)

This report deals with the soil, climatic, irrigation, and moisture requirements of vegetables. Marketing, transportation, insect pests and diseases, intercropping, forcing, seed selection, sowing, transplanting, hot beds, and cold frames are discussed. Special directions are given for asparagus, rhubarb, cabbage, cauliflower, broccoli, cantaloups, celery, onions, potatoes, and tomatoes. A bibliography is appended.

Iron Cow Stall. Hoard-Schulmerich Stall. By F. L. Kent. (Circular Bulletin 9, pp. 4, figs. 3.)

Plans are given for use in the construction of cow stalls of two different types.

RHODE ISLAND STATION, Kingston, H. J. Wheeler, Director.

The Availability of Certain Unusual Nitrogenous Manures. By B. L. Hartwell and F. R. Pember. (Bulletin 142, pp. 275-288, pl. 1.)

The results of growing barley, millet, oats, millet, and oats in succession on plats that had been fertilized with nitrogenous manure, hide and skin meal, tartar manure, beet refuse compound, calcium cyanamid, dried blood, and nitrate of soda are stated. The less common nitrogenous substances are briefly described and their methods of manufacture outlined.

Nitrogen Content and Yield of Crops as Affected by Different Nitrogenous Manures. By B. L. Hartwell, H. J. Wheeler, and F. R. Pember. (Bulletin 143, pp. 291-305, pl. 1.)

This bulletin is a contribution on the availability of nitrogen in starfish, bone, hoof meal, tankage, acid fish, horn meal, and hen manure to barley, Japanese millet, and oats.

SOUTH DAKOTA STATION, Brookings, J. W. Wilson, Director.

Annual Report, 1910. (Annual Report, 1910, pp. 3-30.)

This is made up of reports of the various departments of the station, including a statement of the results of variety tests of oats, wheat, barley, and alfalfa, and a list of publications received by the station. The director gives a financial report and discusses each of the station publications of the year.

TEXAS STATION, College Station, H. H. Harrington, Director.

Report of the Cooperative Forage Crop Work by the United States Department of Agriculture and the Texas State Experiment Station at Chillicothe, Tex., 1909. By A. B. Connor. (Bulletin 132, pp. 7-35, figs. 19.)

The results of experiments with different varieties of sorghums and legumes and with sorghum legume mixtures are followed by data on various grasses. Practical suggestions are made as to soil preparation, seeding, cultivating, and harvesting.

VERMONT STATION, Burlington, J. L. Hills, Director.

Twenty-second Annual Report, 1909. (Annual Report, 1909, pp. XVI + 260 + 10 + XXV-XXVIII, pls. 13, figs. 6.)

This consists of the financial report of the station and the director's report of work in its different departments. Reprints are given of Bulletins 138-143, inclusive, and of Circulars 1 and 3.

Twenty-third Annual Report, 1910. (Annual Report, 1910, pp. XXIV + 751 + 6, pls. 22, figs. 109.)

This consists of the financial report of the station and the director's report of work in its different departments. Reprints are given of Bulletins 144-154, inclusive, and Circulars 4 and 5.

WASHINGTON STATION, Pullman, R. W. Thatcher, Director.

Potato Investigations. By A. G. Craig. (Bulletin 94, pp. 31, figs. 5.)

Directions are given for seed selection. The results of seed selection experiments and tests of 225 varieties are reported and brief descriptions of the varieties not discarded are given.

Clover in the Palouse Country. By G. Severance. (Popular Bulletin 31, pp. 4.)

The comparative value of clover and alfalfa is discussed, clover investigations at the Washington Station briefly summarized, and the essentials of successful clover production stated. Directions are given for seed selection, soil preparation, seeding, the use of a nurse crop, and protection from squirrels.

The Manurial Value of Different Legumes. By R. W. Thatcher. (Popular Bulletin 32, pp. 4.)

This is primarily a report of the results of analyses to determine the fertilizer value of leguminous crops grown in 1909. Topics discussed are value of green manure in Washington, the value of different crops in green manuring, their nitrogen content, and its market value.

